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JULY, 1881.

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THE
BIRMINGHAM MEDICAL REVIEW.
JULY, 1881.

REVIEWS.

DIABETIC COMA.

PROUT has written that a diabetic individual may be considered as existing on the brink of a precipice, and since Prout's time the very precarious tenure by which diabetics hold their lives has come to be very generally recognised ; and we are all aware of the great risks such patients expose themselves to in travelling, probably on account of the unavoidable annoyances, as well as fatigue, which travellers even in these days must put up with. Violent mental emotions and bodily exertion are, therefore, two well known dangers which we cannot be too careful to warn our diabetic patients to avoid.

It is understood well, too, that diabetics are more liable than other persons to the same sort of accidents that befall all persons occasionally : thus a diabetic is more likely to have an attack of pleurisy or pneumonia, and such inflammations not unfrequently pass on to breaking down of the lung, or even to gangrene of the inflamed portion.

But besides this special predisposition to inflammatory diseases, there is a mode of termination of diabetes which has something characteristic and peculiar in it, and which has of late years received a good deal of attention from

Some of the best clinical observers. It differs from those already alluded to in the alarming nature of the symptoms and the rapidity with which death may supervene in the midst of apparent good health. This it is to which the name of Diabetic Coma has been given, from coma being the final and most constant phenomenon, although it is usually preceded by excitement and dyspnœa, more rarely by nausea and vomiting.

The excitement has been described as analogous to that seen in the first stage of chloroform narcosis: the patient is a little incoherent, more vivacious than natural, and speaks rapidly. At the same time he complains of malaise, and occasionally headache is present.

This period of excitement is followed by dyspnœa, which comes on generally suddenly and with violence. The inspirations are deep; both inspiration and expiration are prolonged; the air passes well into the lungs, but, apparently, does not oxygenate the blood. The stage of dyspnœa is not always preceded by excitement, but may come on all at once and without warning.

The attacks of dyspnœa may recur several times; but finally the patient becomes less conscious of what is going on around him and gradually sinks into coma, which becomes more and more profound until terminated by death.

In some cases the coma is not preceded by the other symptoms, but may supervene suddenly, even during a period of apparent health. No convulsive movements have ever been noticed, which affords this form of coma at present a distinctive negative character.

The length of time occupied by the stages above mentioned, until death supervened, has varied in the cases hitherto reported from 10 or 15 hours to 3 days or more, but the average has been about 36 hours.

The sudden termination of diabetes is undoubtedly more common in the young than in persons of more advanced age, but the most potent cause in determining this accident seems to be some excitement, either physical or mental, especially travelling, unusual bodily exertion, and the like. When we proceed to enquire more closely into what is known as to the causation of this group of symptoms, we find great differences of opinion and many conflicting statements of fact, but we shall endeavour to arrange the information which is at our disposal and to draw from it such conclusions as the state of our knowledge may permit.

D. Jules Cyr,* of Vichy, has collected from the writings of various authors and from his own practice thirty-two cases of sudden death occurring in diabetes. From an analysis of these cases, he concludes that there are five modes in which the fatal termination may be brought about. These are: 1, acetonæmia; 2, hyperglycæmia, in which the excess of sugar changes the composition of the blood serum so that the vitality of the red corpuscles is destroyed; 3, the retention of the extractive principles or the watery part of the urine, either, or both together, leading to dropsy of the ventricles and œdema of the brain; 4, atrophy of the heart; 5, cerebral anæmia.

Of these five assigned causes we may dismiss numbers three and five as too vague and indefinite for profitable discussion, and we will proceed to investigate the nature of the facts, if any there be, upon which have been based the conclusions that acetonæmia, hyperglycæmia, and atrophy of the heart occur in diabetes, and how they are supposed to bring about the group of symptoms, the cause of which is the present object of our enquiry.

* De la mort subite ou très-rapide dans le diabète. *Archives Générales de Médecine*, 1877, vol. ii., p. 641; and 1878, vol. i., p. 37.

The theory that the symptoms of diabetic coma might be due to the presence of acetone in the blood was first propounded by Kussmaul* in 1874, who was moreover the first to describe this mode of termination of diabetes.

Petters† had already discovered acetone in the blood, and urine of a diabetic patient, and had ascribed his death to acetone poisoning, and Kaulich‡ had confirmed his observations.

Kussmaul experimented on the results of artificial acetonæmia by injecting acetone under the skin or into the rectum of dogs and rabbits, and observed that it produced intoxication, stupor, and slow respiration, but the quantity required to effect this was relatively very large. To get over this difficulty Kussmaul suggested that the long continued introduction of acetone into the blood might induce a chronic poisoning, which in weak conditions of the nervous system might some time assume an acute form, just as chronic alcoholism in drunkards suddenly breaks out into delirium.

Three years later, in 1877, Dr. Balthazar Foster read a paper on acetonæmia as a cause of diabetic coma, at the annual meeting of the British Medical Association, at Manchester. He described the case of a boy who was attacked by severe dyspnœa the day after admission to Hospital, and died next day. His blood presented a pale cream-like character, which under the microscope presented the appearance of a molecular material like fat globules, but did not dissolve in ether. Having subsequently become aware of the suggestions as to the action of acetone as a cause of diabetic coma, he, in conjunction with Dr. Saundby, made some experiments on

* *Deutsches Archiv. f. klin. Med.* Aug. 1874.

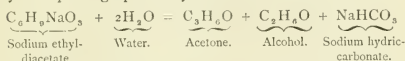
† *Prager Viertel-Jahrsch.* 1837. P. 81

‡ *Ibid.* 1865. P. 58.

Brit. Med. Journal, January 19. 1878.

the effect of acetone on the blood, and having found that it makes blood milky, and that under the microscope, blood, so treated, presents the same molecular character from breaking up of the blood corpuscles, he suggested the hypothesis that the state of the blood in this case was due to the development of a large quantity of acetone in the vessels, and to its action on the blood corpuscles. He furthermore maintained it to be probable that the dyspnœa in these cases was due to the destruction of the blood corpuscles by the action of the acetone.

But doubts have been thrown on the statements of Petters and Kaulich that free acetone exists in the blood, and Rupstein has denied it, affirming that it is produced by the splitting up of ethyl-diacetic acid thus :



In the early part of 1880 Dr. Kien,* of Strasbourg, published a case of diabetes terminating fatally, with dyspnœa and coma accompanied by elimination of acetone. In the discussion on this case at the Société de Médecine at Strasbourg, most of the speakers declined to accept the view that death resulted from acetone poisoning, as they maintained acetone was often eliminated by diabetics without apparent interference with health.

About the same time Professor Quincke,† of Kiel, published an account of a case of diabetes in a young lady aged 16, who died comatose with dyspnœa. During life the urine gave a strong reaction with ferric chloride. The *post mortem* examination disclosed no localised lesion except lobular pneumonia and œdema of both

* Gazette Méd. de Strasbourg, 1880. No. 2.

† Berl. Klin. Woch., Jan. 5th, 1880.

lungs. In his paper he discussed the nature of the substance in the urine which gave rise to the red colour with ferric chloride, and pointed out that it resembles acetic ether in this coloration, in the disappearance of the reaction by strongly acidulating or boiling the urine, and by the appearance later on of its decomposition products, alcohol and acetone in the urine. But, on the other hand, the urine containing this substance did not smell of acetic ether, although ordinary urine or water containing an equal quantity, as estimated by the colour test, smelt strongly; so that if acetic ether were present it must have been combined with something, and it was proved that this was not an alkali, or grape sugar, or any normal constituent of the urine. No one except Rupstein has ever been able to extract acetic ether from urine by shaking it with ether.

Quinke performed twenty experiments on animals, in order to determine the physiological effects of acetic ether. The animals died with marked dyspnœa; in only one instance did the urine give any reaction with ferric chloride, and the breath never smelt of acetic ether; glycosuria was sometimes present. Apparently, therefore, the acetic ether was rapidly destroyed in the body.

Quinke concludes by stating his belief that the substance in the urine of diabetics which gives the red coloration with ferric chloride is not acetic ether, but a nearly allied body, and that there is ground for believing that the dyspnœa of diabetics is not always identical in its character, or always produced by one and the same substance, but, like uræmia, it is probably produced by the combined toxic action of many substances formed by abnormal metamorphosis.

But a fresh contribution to this question was the importance newly assigned to the old fact that the blood of diabetics often contain large quantities of fat

The presence of an unusual amount of fat in the blood in certain cases of diabetes was pointed out many years ago by Dobson and Rollo, and has been confirmed by a great number of observers, among whom are Marsh, Hutchinson, Thomson, Lebert, Pavy, Hoppe-Seyler, etc. They have shown that an appreciable amount of fat can be extracted from the blood of diabetics by agitating it with ether. Simon found 2 to 2.4 per cent., while the normal is only 1.6 to 1.9 per cent.

In 1879, the late Professor Sanders,* of Edinburgh, and Mr. D. J. Hamilton, published a case of diabetes in which the patient died with dyspnœa and coma, and at the *post-mortem* examination the blood was milky, and contained a large quantity of fat globules, and fat embola were found in the pulmonary capillaries. They suggested that capillary embolisms of the brain and lungs might be the cause of the dyspnœa and coma.

Dr. Arthur Gamgee† has published the notes of a case which was in the Manchester Royal Infirmary, under the care of Dr. W. Roberts. This patient exhaled a peculiar ethereal odour, which pervaded the whole ward, and attracted the attention of the other patients. After returning from a walk, he was seized with intense dyspnœa, became subsequently comatose, and died twenty-one hours after the commencement of the attack. The blood was examined during the coma without any deviation from the normal appearance being noticed. Some blood drawn from the arm by venesection coagulated normally, and the serum was distinctly milky, though not more so than is compatible with a physiological condition. At the *post-mortem* examination a considerable quantity of blood was milked out after some hours.

* Edinburgh Med. Journal. July, 1879.

† A Text Book of Physiological Chemistry of the Animal Body, vol. i., p. 169, et seq.

creamy layer floated to the surface, which formed about $\frac{1}{6}$ th of the total volume of the liquid. This was found to be composed of oil globules; and an analysis of the blood showed it to contain 13.55 parts of fat per thousand.

The lungs, kidneys, and brain in this case were scrupulously investigated by Dr. Dreschfield without the discovery of any embola.

In a second case, which exhaled an intense ethereal odour and terminated by dyspnoea and coma, the blood *post mortem* was found to possess the acetone-like odour and an analysis shewed it to contain only 1.88 parts of fat per thousand.

Dr. R. H. Fitz* has reported the case of a patient dying comatose after a few weeks' illness. *Post-mortem* examination was negative as regards all the organs, except the lungs, which contained a small number of fatty embola. The blood had a sour smell, and contained a large quantity of fat, fatty granular matter, and acetone; the bladder contained urine which on testing gave the re-action of sugar.

Von Jaksch has published a case of diabetic coma in a boy aged 13, which came on three weeks after the first symptoms of the disease showed themselves; the boy died in four days, with a rectal temperature of 91.9° F. The *post-mortem* examination showed great emaciation, atrophy of the pancreas, catarrhal pneumonia in both lungs, catarrh of the colon, and traces of cured typhoid fever. The blood examined during life *showed destruction of the red corpuscles, but no fat drops*. The urine gave a red coloration with ferric chloride, and on shaking with ether acetone was obtained from it.

* Boston Med. and Surg. Journal, Feb. 10th, 1881.

He also describes a case of acetonæmia in a boy who was not the subject of glycæmia, and who recovered completely after free purgation.*

The destruction of the red corpuscles without fat drops in the first case is an interesting confirmation of Foster's observation, which was too hastily assumed by Sanders and Hamilton to have been erroneous.

From these cases it is plain that, 1, all cases of diabetic coma have not milky blood; 2, that all cases of milky blood are not fatty blood, as assumed by Sanders and Hamilton; 3, that even when fat is present in the blood, fat embola may be absent or very scarce; 4, that no proof has been offered of such extensive capillary embola as would account for the alarming symptoms under discussion, especially those of nervous origin. It is therefore not too much to say that the theory of Sanders and Hamilton has so far received very little support.

But has the theory of acetonæmia any greater claims to our acceptance? The cardinal fact itself, the presence of acetone in the blood is much disputed; the smell of the breath undoubtedly resembles the smell of acetone or acetic ether, but the proof of the presence of either in the blood is indecisive, and certainly no quantity sufficiently large has been found to account for the physiological phenomena for which, in experiments on animals, a large quantity is required. But the symptoms are so entirely suggestive of intoxication and, in spite of the differences of chemists, the presence of substances nearly allied to acetone both in the blood and urine is so indisputable, that although we do not pretend that the toxic agent has yet been certainly identified, and may finally resolve itself, as Quincke suggests, into a multiplicity of nearly allied substances, yet the balance of evidence goes

* *Prager Med. Wochenschrift.* 1880. Nos. 20 and 21.

entirely in favour of the probability of the theory. The objection that acetone is often eliminated in health is obviously not a very important one, for the poisonous effect of any agent depends upon the quantity in the system, possibly also on the rapidity with which it can be eliminated, and must vary with the state of the individual, and, as Kussmaul suggested, chronic acetonæmia may create a predisposition to the development of acute symptoms from relatively small quantities. It seems probably that acetonæmia must occupy a very similar position to uræmia for some time to come, and that the solution of the problems in each case must wait for the advance of physiological chemistry and especially for progress in the chemical manipulations of the fluids of the body.

It is quite conceivable that the blood might become so overloaded with sugar that, as suggested by Dr. Cyr, the vitality of the blood corpuscles might be destroyed, and, in fact, we know that a condition of hyperglycæmia occurs in diabetes, for Pavy* has shown that the blood in health contains on an average about 0.9 parts of glucose per thousand, but in diabetes it may rise as high as 3, 4, or 5 parts per thousand.

But we are entirely without any information as to the pathological relationships of this condition, so that we are not justified in assigning to it at the present any special part in the development of diabetic coma, although, as already remarked, it is quite possible that the excess of sugar in the blood does play a more important part than has been hitherto proved.

We have much less difficulty in assigning a proper value to the last of the causes we have to consider. We

* CRABTREE, Lecture on certain points connected with Diabetes. London 1878.

know so well the vital importance of the integrity of the cardiac muscle, and the fatal dynamical results that must ensue whenever its structural integrity is impaired, that once we have had sufficient evidence that such a condition is frequent, we shall readily assent to the proposition that it may be regarded as a highly important factor in determining the fatal termination of these accidents.

Dr. Richard Schmitz, of Neuenahr,* has described fatty heart as an extremely common condition amongst diabetics. He says that out of 109 diabetics, in 80 he could discover the objective symptoms of fatty heart, these being, according to Dr. Schmitz, shortness of breath, small soft pulse, weak cardiac impulse, and weak sounds, especially the first sound. Of these 80 persons 12 died suddenly in their own homes. In two patients, who had overtaxed the powers of their hearts by a very fatiguing journey, Dr. Schmitz observed a high degree of insufficiency of cardiac action. His urgent counsels to rest the overworked organ were unfortunately not attended to. In consequence of this neglect the patients suddenly collapsed and died. In seven other cases bodily exertion brought on symptoms which threatened to be fatal, but absolute rest in a horizontal position, and the use of stimulants caused the threatening symptoms to disappear.

* *Berliner Klin. Woch.*, Jan. 31, 1876. *Lond. Med. Record*, 1876, p. 200.

CYCLOPÆDIA OF THE PRACTICE OF MEDICINE.*

THE subscribers to this comprehensive Cyclopædia will be gratified to learn that this volume now issued completes the work. Very great credit is due to the general editor of the English translation, to the many translators engaged, and to the publishers, for having accomplished the vast undertaking within so moderate time. In its extent and completeness this Cyclopædia far exceeds any like library of medicine produced in this country. As a commercial venture in medical publishing it is unrivalled, and the enterprise attaching to it deserves success.

We have in former parts of this Review briefly noted the appearance of previous volumes and their contents, and in each instance have had to express high commendation, after allowing for whatever blemishes were discoverable. The present volume is fully equal to any that have gone before, possessing like excellencies and like defects. Like its predecessors, it is a faithful presentment of pathology as understood and taught in Germany.

Pathology and symptomatology are the strength of this Cyclopædia, and the fulness with which the former subject is treated, will ever give a special value to its several volumes, and make acquaintance with them necessary to every physician who would be a pathologist. In the matter of therapeutics, it may be the practitioner will generally find very much less to learn.

* *Cyclopædia of the Practice of Medicine*. Edited by Dr. H. von Ziemssen. Vol. IX. Diseases of the Liver and Portal Vein, with the chapter relating to Intestinal Prognosis. London, 1887. Pp. 628.

It is not so many years ago that a wide gulf separated Continental from English practice, and our fellow countrymen prided themselves on the definiteness and the decided character of remedial treatment pursued in this kingdom, compared with that which the "impractical" or theoretical foreign doctors employed. This divergence in practice is vastly diminished, a circumstance that, on the whole, must be held to point to a more healthy state of things, particularly in Great Britain. It points, in fact, to a better comprehension of the nature of disease and of remedies following upon improved pathological and physiological knowledge and experimental therapeutics. An observation of what has taken place will show that the lessons so gained have exerted wider effect upon British than on foreign medical practice, and have displaced much of the empirical and often heroic treatment which in former years English doctors so greatly cherished.

It must be said of the essays in this large Cyclopædia, written by various authors, that they cannot be regarded as sufficiently representative of opinion and teaching outside Germany. All the writers are Germans, men too more or less famous in medical science and well versed in the vast medical literature of their own country, at the same time, probably from their unacquaintance with other languages than their mother tongue, they exhibit slender knowledge of the scientific and clinical work done and recorded in other lands. This we have heretofore remarked on in former reviews. The same fact is equally observable in this present treatise on diseases of the liver. A moderate number of English books on hepatic diseases are enumerated in the bibliography prefixed to the several essays, but many of importance are omitted, and even of those noted, the absence of reference to them in the text,

or the mode in which they are referred to, is suggestive of the writers being acquainted rather with the title than with their contents. Few quotations only are made from Dr. Murchison's considerable writings on diseases of the liver in three or four articles, and in others no notice whatever of them is to be found even in the bibliographies attached.

The translators are to be congratulated generally on their labours, although, from being mostly natives of the United States, they introduce here and there words less consonant with English taste.

The authors of the several essays or chapters are:—Ponfick, who writes the *Anatomico-Physiological Introduction*; Thierfelder, who deals with *Hyperæmia, Suppurative Inflammation, Cirrhosis, and Acute Atrophy*; Heller, who has a short paper on *Hydatids of the Liver*; and Von Schnepfel, to whom has been allotted all the remaining lesions, including *Cancer, Amyloid Degeneration, and diseases of the Biliary passages and Portal Vein*. The concluding chapter is not concerned with hepatic diseases, and looks rather oddly placed in this volume, its subject being *Interstitial Pneumonia*. It is from the able pen of Juergensen, and is supplementary to the volume on *Diseases of the Chest*.

Many of the chapters on hepatic diseases compare advantageously with what we find in the treatises of British writers, and especially, as above remarked, in their pathological portion; and the attentive reader cannot fail to grasp a clear notion of the character and symptoms of the several lesions described; nay, were we disposed to be hypercritical, we might assert that the subdivisions of the chapters, by the manner in which they are dealt with, lead to considerable repetition of the same facts. But this is a fault that has the advantage of

being likely to impress such facts more deeply on the reader's mind.

If we may cite an example where the information of the German author falls short of that of English physicians, it is on the subject of suppurative inflammation of the liver, a lesion of which the latter enjoy so wide a field of study in the extensive possessions of England in tropical and subtropical countries. In European hospitals it rarely falls to the lot of the physician to follow the history of that form of suppurative inflammation which Dr. Murchison treated of under the term of "tropical abscess," to distinguish it clinically from what he called "pyæmic abscesses;" consequently, so far as Thierfelder has failed to fully portray the former, his fault is due to his comparatively limited opportunities of observation and to the small knowledge he possesses of the writings of British physicians.

We must now close our notice of this great undertaking by a reference to a notice accompanying this last volume issued, addressed by the publishers to the subscribers. Attention is called to the fact that as an encyclopædia of medicine it is incomplete by reason of the omission of a volume on diseases of the skin. However, the publishers liberally engage to make good this deficiency by producing an independent volume on those diseases, to be presented to every subscriber who has at the time of its appearance completed his set of the cyclopædia; another welcome addition promised is an index volume to the whole work, this is in course of preparation and will be supplied to subscribers "at the probable price of one guinea."

Messrs. Sampson Low and Co., the publishers, are justified in the satisfactory retrospect of the history of the whole undertaking, and we hope that a review of the results of it as a commercial venture prove no less

satisfactory. They explain the circumstance of the original estimate of fifteen volumes being exceeded as one beyond their control; and, for the solace of subscribers who have thereby been called upon to pay for two volumes over and above the number bargained for, they show that, taking the excess of pages occurring in every volume, except one, beyond the number originally arranged for, each subscriber has received "an equivalent of $7\frac{1}{3}$ volumes" more than promised, and surely this may be accepted as solid comfort for a breach of covenant, and a very good bonus on the subscription price.

The Cyclopædia, as now completed, should be found in every considerable medical library, for it assuredly will remain, for a long time to come, the standard work of reference in practical medicine; and when, at a future period, new discoveries and advancing experience render some of its matter obsolete, our successors will find it the most satisfactory representation of past opinions and knowledge they can turn to, where they will trace the history and progress of medical science.

LECTURES ON SYPHILIS.*

THE author of this work has avoided the too common fault of bookmaking, by carrying condensation to its utmost limits. Every chapter is full of interest and of instruction, and contains much that is suggestive for future thought.

The history of syphilis is traced through the writings of Hunter, Ricord, Bassereau, Clere, Fournier, Henry Lee, and others. The author expresses his own adherence to the "unique" theory of syphilis, and appears to agree in Mr. Hutchinson's opinion as expressed during the debate on syphilis at the Pathological Society in 1876, "that duality is dead." With this opinion we have never been able to coincide. How a disease appearing after a long incubation, presenting a single sore, which is absolutely non autoinoculable, which is never associated with suppurating bubo, and which, to say the least, is *usually* followed by constitutional infection, can be the same disease as one which manifests itself in sores usually multiple, appearing without any period of incubation, which are indefinitely autoinoculable, frequently accompanied by bubo, and very rarely (in our own opinion *never*) associated with constitutional infection. How these two diseases can be held as due to one poison, modified by the constitutional peculiarities of the recipient, we cannot see. Surely it would be as reasonable to consider in the same light, as diseases due to a common poison, and modified by idiosyncracies of the patients, such diseases as typhus and typhoid, or scarlatina and measles.

We quite agree with the author in his views on syphilisation. His experience of Professor Boëck's practice at the

* "Lectures on Syphilis." By James R. Lane, F.R.C.S. 2nd Edition. J. and A. Churchill.

Lock Hospital is confirmed by our own, in the Professor's own wards at Christiania. Mr. Lane's views of reinfection of syphilis, of the infectious nature of secondary lesions and of syphilitic blood, as seen in vaccine syphilis, well deserve study, as also do his chapters on hereditary and visceral syphilis, while his views of the treatment of this protean disorder in its various forms and stages are clearly and definitely expressed, and appear to us to be eminently judicious. We cannot too highly commend this work, which, while containing much that is original, also epitomises other discursive works, to the attention of those specially and generally interested in the important subject of Syphilis.

CÆSAREAN SECTION, CRANIOTOMY.

AND ON OTHER

OBSTETRIC OPERATIONS.*

AFTER an interval of some years, a second edition is now published by this veteran obstetric authority, and is well worthy the perusal of all interested in this branch of medicine, as well as of all engaged in abdominal surgery, who doubtless look upon the future of the Cæsarean operation as likely to be very much more fruitful in success than it has been in the past; because the operation will be resorted to earlier, and its manner of performance will be in accordance with the principles that are now known to command success in other and similar abdominal operations.

In this volume, Dr. Radford seeks to urge the more frequent recourse to Cæsarean section; and says that it

*"Observations on the Cæsarean Section, Craniotomy, and on other Obstetric Operations." By Thomas Radford, M.D. Second Edition. London: J & A. Churchill. 1880.

should be generally performed as an operation of election, and very seldom as one of necessity; whereas, on the other hand, he considers that craniotomy is to be looked upon in nearly all cases as an operation of necessity, rarely of election.

The author has himself performed Cæsarean section 6 times, with 4 deaths: a mortality of 66.66 per cent.; and 3 children were born dead. Of these latter, 2 were dead before operation, and 1 died through constriction of its neck by the uterus during operation. There is also a list of cases, in all 131, which have been reported as occurring in Great Britain and Ireland from time to time since the year 1738, which, on looking over, shews a mortality of mothers which it is to be hoped will not be possible to be repeated in the next 140 years, if so many or more such operations should be performed in the same period. As shewing the difficulty of accurately compiling such a list of cases as Dr. Radford has, with much labour to himself, got together, it may be mentioned that, to our own knowledge, one case has been omitted. It was in the practice of the late Mr. George Allarton, of West Bromwich. The operation was performed in October, 1844, in the presence of the late Dr. Ingleby, and Mr. Wickenden, both of Birmingham. The case was one of obliteration of vagina, and is recorded in a later edition of Mr. Allarton's "*Lithotomy Simplified.*" An aperture was made into the rectum to give vent to the lochial discharge. The child lived to grow up; the patient died at the end of four days. Puncture of the intestines for the relief of flatus was practised. It was the patient's second child, she having had her first 10 years before, after a severe and protracted labour. At the autopsy it was found that the bladder and rectum were inseparably connected up to the os uteri.

As measures to supersede the Cæsarean section, Dr. Radford briefly refers to "Laparo-Elytrotomy," and to Porro's operation. Only two cases of the former have occurred in this country. May not oophorectomy come to be practised in cases where craniotomy has been performed in a first labour, and the pelvis seen to be unfit to allow a viable child to pass?

ON MECHANICAL IMPAIRMENTS

OF THE FUNCTIONS OF THE

CRICO-ARYTÆNOID ARTICULATION.*

The author of this paper wishes "to draw the attention of the profession towards a hitherto much neglected, if not almost unknown, source of motor disorders in the Larynx."

He points out that a great many of "the so-called functional or hysterical neuroses" and the term "rheumatic paralysis" have but one thing in common, viz:—"that we do not yet sufficiently understand their pathology." This is no doubt true, and consequently the efforts of men who have special opportunities are always welcome to the profession as earnest endeavours to differentiate or add diagnostic value to, various hitherto, mis- or ill) understood groups of symptoms.

The author professes to give everything that has been said or done with regard to such mechanical impairments, and gives a list in which "cursory remarks," "every observation published," and "even occasional remarks" are to be found. In this list is not included the name of

* "On Mechanical Impairments of the functions of the Crico-Arytænoid Articulation (especially true and false ankylosis and luxation) with some remarks on Perichondritis of the Laryngeal Cartilages." By Felix Semon, M.D., Berlin, M.R.C.P., Lond., Physician to the Hospital for Diseases of the Throat and Chest, (reprinted from the Medical Times and Gazette, Vol. II., 1880.

Dr. James Russell, who in a paper on "Laryngeal Disease as exhibited by the Laryngoscope," reprinted from the British Medical Journal in 1864, several times speaks of rigidity of the arytaenoid cartilages with respect to imperfect vocalisation as being caused by the action of inflammation on their coverings, &c. He says, page 9, "the movements of the arytaenoid cartilages are thereby as completely impeded as is the action of the elbow joint by a contracted cicatrix after a burn." In a large proportion of these cases ankylosis of this joint we may fairly deem to be caused by the want of use consequent upon inflammation of the mucous and sub-mucous membranes, and, as we see, Dr. Russell was quite aware of this in 1864. It is true that a case described by Maudlin (*Gazette des Hôpitaux*, No. 63, 1862), gave a "description not sufficiently distinct;" but Dr. Russell was surely distinct, for he gives the history of two cases of chronic laryngitis, where he says (1st case) "the arytaenoid cartilages were permanently approximated and exhibit none of their usual movements." He then gives drawings (2nd case). "I then found the arytaenoid cartilages permanently approximated;" so that his cases ought to be placed amongst those tabulated by Dr. Semon.

In 1837, our townsman, Frederick Ryland, then surgeon to the town infirmary, gave a case of ossified and carious arytaenoid cartilages. We commend these cases to the care of Dr. Semon, who will doubtless give them their proper place.

We also notice that Prosser James is not included in the list, although at page 256 he says (treating of "nervous affections") "the movements of the vocal cords may be impeded by extrinsic circumstances. Thus, swelling of the parts around may prevent their approximation or proper vibration, in which case loss of voice or hoarseness

will ensue ; " " ankylosis of the arytenoid cartilage may produce similar interference with vocalisation," &c. &c. We have no doubt, that if Dr. Semon will carefully collate all the cases which come under his notice, many others will be diagnosed in consequence of his efforts, and that ultimately all standard works will contain a chapter on disorders of the motor apparatus in the larynx.

THE DIAGNOSIS OF HEART DISEASE.*

THAT Dr. Sansom's little book should have reached a third edition, is in itself a strong proof of its merits. We have much pleasure in saying that it is a most complete and carefully written manual of the diagnosis of cardiac disease, arranged in a very readable and instructive style. We have been especially pleased with the manner Dr. Sansom has treated those points upon which differences of opinion exist. We find that he has stated the known facts on both sides fairly and fully, and his conclusions are in the main those which we believe to be sound. While insisting upon *physical signs*, Dr. Sansom does not neglect to call attention to the importance of the *symptoms* of cardiac disease, and points out the importance of this especially in reference to the successful treatment of cases. The indications afforded by the sphygmograph and cardiograph are treated more fully than in any other manual we possess.

Dr. Graham Steell's *brochure* does not compare very favourably with Dr. Sansom's more complete work, but so far as it goes it is excellent. Its scope is to indicate the method of examining the physical condition of the

* 1. "Manual of the Physical Diagnosis of Diseases of the Heart." By Arthur Ernest Sansom, M.D., Lond. Third edition. J. & A. Churchill.

2. "The Physical Signs of Cardiac Disease." By Graham Steell, M.D., Edin. MacLachlan and Stewart.

heart and great vessels. Vexed questions are avoided, and no attempt is made to deal with the pathogenesis of the abnormalities referred to, or to consider the diagnosis of cardiac disease in its broader clinical aspects. What it loses in scope, it undoubtedly gains in clearness; and, as a quite elementary manual of physical signs for ward clerks, we can heartily recommend Dr. Steell's little book.

HEALTHY HOMES.*

This little *brochure* is a very concise and well written account of such elementary facts in physiology and the laws of health as may serve to prevent much sickness and sorrow, by making the public better able to appreciate the sources of ill-health.

It is obviously not intended for the professional reader, but we can recommend it with confidence and pleasure to those for whom it was written.

SKIN DISEASES.†

MR. MORRIS has been well advised in the effort he has made to furnish a treatise on Diseases of the Skin, intermediate in point of length between the major works on this subject, such as those of Hebra and Wilson, and the generally unworthy and insufficient chapter on Skin Diseases, introduced in a semi-apologetic way at the end of a book on medicine.

That Mr. Morris has succeeded in the whole of the objects before him we are inclined to doubt, for while the simplicity of the book must undoubtedly commend it to

* "Healthy Homes." By Stanley Haynes, M.D., M.R.C.S., F.R.G.S. London: Baillière, Tindall and Cox.

† "Skin Diseases. Including Definition, Symptoms, Diagnosis, Prognosis, Morbid Anatomy and Treatment. A Manual for Students and Practitioners." By Malcolm Morris, M.R.C.S., Eng. Smith, Elder & Co.

students, its conciseness, more especially on matters of treatment, will hardly be a recommendation to a practitioner in search of assistance in the management of an obstinate case. To a student, and more especially one preparing for examination, we can most heartily commend the book. It is singularly free from errors of statement or style, contains a very thorough and concise account of the anatomy, normal and morbid, of the skin, while the descriptions of the various diseases are graphic and accurate.

It is to be regretted that fully one seventh of the book should be occupied by an account of the various general diseases associated with symptomatic rashes on the skin or mucous membranes: from the stand point of the dermatologist, it would have been necessary to mention these conditions only in relation to differential diagnosis of skin diseases proper, while from the point of view of the physician, these descriptions of scarlatina, measles, etc., are meagre and valueless. Mr. Morris has been unable to resist the temptation of an independent search for that philosopher's stone of dermatologists, a new system of classification, which, like other efforts in that direction, is incomplete, and we do not think that, amongst other peculiarities, the removal from Zoster of other varieties of herpes into a distinct class will be generally acceptable.

The treatment of syphilis is very briefly dismissed, and classified with some rigidity in keeping with the stage of the disease to which the symptom treated belongs; most practitioners will agree with Mr. Morris in recommending the use of mercury so soon as the disease has been recognised, and its continuation during the secondary condition, but will hardly accept the dogma that, during the third stage, mercury by the mouth should, with only a few exceptions, be avoided, especially when the deeper tissues are involved. Iodide of potassium is recommended;

but we believe, and this especially in cases of neglected syphilis, a combination of these two drugs forming the bin-iodide of mercury, acts often more efficiently than the potash solution. We should almost have expected the same opinion from Mr. Morris, as a few pages earlier he very carefully draws attention to the difficulty of the sub-division of the syphilo-dermata into second and third stages, each occurring now early now late in the course of the disease. The syphilo-dermata are very carefully described, and the points of general difference between them and simple eruptions clearly defined. No mention is made of psoriasis linguæ, which we believe to be usually syphilitic in its origin.

In speaking of herpes iris, which Mr. Morris apparently does not regard as identical with erythema iris, he says that it is not accompanied by any constitutional symptoms. This disease is sufficiently uncommon to make even a limited experience of it valuable, and it has been our experience in four cases we have met with to find it associated with oxaluria and great mental depression. One of the best chapters is that on eczema; the pathology and description of the disease are excellent, and we are glad to see, in accordance with the definition of eczema as an acute inflammatory disease of the skin, ecthyma, pityriasis rubra, and other results of catarrh of the skin are included under this head. It is however here that we have special reason to complain of Mr. Morris' therapeutic conciseness; there is little attempt to state general principles of treatment, very little help to recognising the relationship between constitutional condition and peculiarities of eczema, and no suggestions for treating the more difficult and obstinate cases, which form the chief difficulties of cutaneous practice. It is to be hoped that Mr. Morris

will, in future editions of this generally admirable book amplify the sections on treatment, and make his work of more use to the second class for whom it is written.

COULSON ON THE DISEASES OF THE BLADDER AND PROSTATE GLAND.*

COULSON'S work on the diseases of the bladder and prostate, is a monograph that has long been held in high estimation by the profession generally.

The present volume is entitled the Sixth Edition, the so called revision having been made by the author's son, Mr. Walter Coulson. Practically, however, the book may be said to have been rewritten, several chapters added, and the *toute ensemble* brought up to modern date and requirement. In place of the opening chapters being devoted to a chemical analysis of the urine, there will be found a good description of the anatomical relations of the bladder and prostate gland, together with physiological considerations of the mechanism of micturition, and of the retention of urine in the normal bladder. This is followed by an explanation of the various methods of examining the bladder, and amongst them the bimanual method of Volkmann.

The endoscope is not spoken of as an instrument highly serviceable as a means of diagnosing disease in the male organ.

Simon's plan of catheterising the ureter is well described, but the author thinks with the majority of surgeons, that it is very difficult to insert the point of the catheter into the vesical opening of the tube. Winckel's statement that he has always failed to accomplish this is quoted. Various abnormalities, together with hernia

* "The Diseases of the Bladder and Prostate Gland." Sixth Edition. Revised by Walter J. Coulson, F.R.C.S., Surgeon to St. Peter's Hospital for Stone, etc., and Surgeon to the Lock Hospital. J. & A. Churchill, 1881.

and displacements of the organ, are considered at length.

With regard to the treatment of vesical rupture, cystotomy is stated to be an operation which cannot increase the gravity of the case ; laparotomy and suturing of the wound in the bladder is, on the whole regarded favourably, and in some cases offers the only chance to the patient. Chapters are devoted to the various inflammations of the bladder, fistula, tumours, hæmaturia, incontinence and retention of urine, in which the causes, diagnosis, prognosis, and treatment of the affections are fully entered upon.

An interesting chapter is that devoted to the causes of vesical calculus. We would direct special attention to this, as containing an epitome of the researches and conclusions on this question of an eminent Viennese authority, Dr. Ultzmann, this, we believe, being the first recognition by an English author of his laborious and long continued investigations. These researches show that a calculus formation may be primary, that is taking place in the kidney, in composition generally uric acid, and that the spiny clumps are the forms which most generally act as a nucleus ; furthermore, that the secondary formation taking place in the bladder is phosphatic. Oxalate of lime is not often a nucleus, but a superadded layer, and that uric acid kidney infarctions in infants account for the frequent occurrence of calculi in children.

Referring to drinking water as a cause of stone, Mr. Walter Coulson remarks "that it is difficult to trace any causative connection between the use of calcareous waters and calculous disease ;" although Mr. Cadge is mentioned as believing that stone is due, in part to drinking hard water, scarcity of milk, and lithuria caused by malt liquors and too much animal food.

In a new chapter is described Bigelow's operation of litholapaxy, and illustrations of the instruments recom-

mended by that surgeon, and the modifications of the same by Sir H. Thompson are given. While stating that this operation is at present on its trial, Mr. Coulson expresses his opinion that it will ultimately diminish the number of lithotomies undertaken for calculi of large size, in which cases the mortality is often great. The operations of lithotomy and lithotrity are fully discussed, and various statistical tables presented. The solvent and preventive treatments of calculus are also considered, the book concluding with four chapters on diseases of the prostate gland and their treatment. We can cordially recommend this new edition of Mr. Coulson's work as a trustworthy guide and reference.

THE IMMEDIATE CURE OF INGUINAL HERNIA.*

THIS monograph is a reprint of two articles which appeared in the British Medical Journal, describing an ingenious method of radically curing Inguinal Hernia. Firstly, all the protruding gut is carefully returned into the abdomen, then the fascia and sac are invaginating with the left forefinger, and the pillars of the ring are brought into apposition by means of an instrument resembling a corkscrew, which is left *in situ* for a week, and sets up sufficient inflammation to obliterate the opening into the abdominal cavity. Mr. Spanton gives particulars of 24 cases that have been thus operated on by himself and other surgeons who have found the plan both practical and efficacious.

* "The Immediate Cure of Inguinal Hernia by a New Instrument."
By W. Dunnett Spanton, M.R.C.S., Surgeon to the North Staffordshire Infirmary.

ORIGINAL COMMUNICATIONS.

INAUGURAL ADDRESS,*

BY T. H. BARTLEET, M.B., LOND., F.R.C.S., ENG., SURGEON TO THE
GENERAL HOSPITAL, BIRMINGHAM;

PRESIDENT OF THE BIRMINGHAM AND MIDLAND COUNTIES BRANCH
OF THE BRITISH MEDICAL ASSOCIATION.

IT is my first, as it is assuredly my most pleasing duty, to express to you all my grateful appreciation of the honour you have conferred upon me in placing me in your Presidential Chair.

The position of President of the Birmingham and Midland Counties Branch of the British Medical Association is honourable in many ways. Honourable from the responsible duties it frequently entails upon its occupier, representing as he does, for a time, the medical profession of this important district. Honourable in its traditions, in the retrospect of the men who have for the past 40 years passed through the office; but honourable, and an object of legitimate ambition, foremost of all, in that it is conferred by free and open vote upon a member of this Society by his fellow members, by the men who know him best, by the men whose praise is praise indeed.

Gentlemen, I trust that, fortified by your support and aided by the assistance of the permanent staff, always so willingly rendered, I may be enabled at the close of my year of office to hand over to my successor unsullied the dignified and responsible post your favour

* Delivered at the Annual Meeting of the Birmingham and Midland Counties Branch, June 28th, 1881.

has confided to me to-day. I assure you no efforts on my part shall be wanting to ensure this event.

I purpose giving you to-day, a brief account of the advances in the practice of surgery during the past ten years. I have chosen this subject for my presidential address, partly because my own studies and duties lead me mainly to the consideration of surgical subjects, but chiefly because, in our town and district, surgery is a more general and more important study than it is in many districts which being more completely agricultural, are more remote from causes of surgical casualties and resulting surgical diseases.

It is not yet quite ten years ago that a distinguished surgeon publicly expressed his opinion that the *art* of surgery had nearly, if not quite, reached its final limits. I cannot but think that this idea of finality in the art of surgery is a very delusive, if not a very dangerous one. We may well remember that other things besides history repeat themselves, that what has occurred in the past will occur in the future, and that the next ten years will in all human probability see advances and improvements in surgery, as in other things, as important and as beneficial as has the last decade.

There have been marvellous changes in surgical *dressings*: changes of every kind and degree from the old complex unguents and healing salves that were vaunted as specifics, and often bore the name of some popular surgeon, down to the absolute and charming simplicity of no dressing at all.

The use of the *drainage tube* in its various forms—caoutchouc, spiral wire, vulcanite, glass, horse hair, and decalcified bone—forms as yet an unwritten chapter in surgery: surely not from any neglect of its immense importance.

During the last few years the use of one or other of the many absorbent dressings has become general. There are few better than the one first employed, picked oakum, introduced into this town from the United States, by the late Redfern Davies, and which is cheap, clean, and efficient.

I cannot of course pass by antiseptic dressings, and I venture to express the opinion, that hospital surgeons who do not themselves employ Listerian precautions owe some of the success of their open treatment, to the antiseptic atmosphere provided in the wards, by the dressings and operations of their antiseptic colleagues. All honour then to Joseph Lister, who has, at all events in the opinion of so many of us, revolutionized hospital surgery, who has been the means of saving more lives, and diminishing suffering more than any one man since the time of Jenner; who has rendered operative surgery what, under some conditions it could hardly be considered before, a benefit to the human race, and a credit and delight to the surgeon. All honour to his philosophic mind, to his scientific and laborious investigations, to his persistence in spite of opposition, to his self sacrifice in leaving his beloved Edinburgh, with its attractions and its opportunities, to become the apostle of antiseptics in our metropolis.

In *surgical instruments* great advances have been made in the past ten years. The employment of Esmarch's bandage in operative surgery has facilitated most operations, and has rendered some, previously almost impossible, comparatively easy, while the avoidance of loss of blood is often an important factor in the recovery of a patient.

After a long experience of the use of Esmarch's bandage in operative surgery, I have not found it associated with the risks of sloughing or of subsequent oozing that were predicted on its introduction.

The aspirator of Dieulafoy has proved an instrument of the greatest utility, probably at least as important as an instrument of diagnosis as of treatment. When first introduced it seemed likely to be universally used in opening joints, and in large chronic abscesses, in relieving pleuritic effusion where necessary, and especially in evacuating empyema; but the safety, I might even say the far greater safety of antiseptic incision, with or without a drainage tube through the chest, has abrogated its employment in many of these cases. I have successfully evacuated with the aspirator needle, the fluid in a pericardial effusion, I frequently employ the instrument to remove the fluid which so frequently rapidly distends the large joints after injury.

But perhaps the most important use of the aspirator, is its employment in cases of retention of urine. Few cases fall under the notice of the surgeon requiring greater promptitude than do these. The demand for assistance has usually not been made until it has been necessitated by urgent distress. This distress rapidly increases and ushers in danger, the danger of rupture of urethra, with its frequently fatal, always painful, dangerous and lasting consequences. The attempt to pass a catheter will occasionally prove a failure in the most skilful hands, especially in cases such as we are considering, where there is not time for recurring or even prolonged catheterisation. An exhausted needle passed in the median line above the symphysis pubis, will relieve the bladder with equal certainty and safety, and the operation may frequently, I had almost said indefinitely be repeated.

Paquelin's cautery a most useful and practical application of scientific knowledge, has added an important aid to the operating surgeon. Its employment in excision of the tongue, wholly or in part, and in the removal of

hæmorrhoids, seems to me eminently satisfactory, as also its application in some cases of nævus, in which the liability of the galvanic cautery to get out of order, has caused it generally to be regarded as dangerous. Among other new instruments I must mention the self-retaining catheters, especially the very ingenious one invented by the late Mr. Donald Napier, which I have found useful, and also a very convenient splint for the treatment of fractured patella, invented by Mr. Steavenson, a former house surgeon at St. Bartholomew's.

I am inclined to think that some new instruments have not retained, or even attained the popularity that was expected.

The jointed probe is not quite indispensable in our pocket case. The ingenious serrated scissors of Richardson are, I think, rarely employed; and even the ether spray discovered by the same distinguished scientist is, I think, hardly as much used as it was some years ago. Its displacement may be to some extent due to the more frequent employment of nitrous oxide gas in minor surgical operations. Skin grafting, though perhaps hardly as much used as when at first introduced, is still a useful surgical aid in the healing of extensive granulating surfaces.

The case of bone grafting recorded within the last few weeks by Macewen, will open up a new and important field of surgery.

The endoscope was thought likely to be a material assistance in the treatment of urethral and bladder disease. It has almost fallen out of use; and I believe that the addition of the microphone to their case of lithotomy instruments is by no means a common custom with operating surgeons.

The employment of the elegant scarificator, devised

by Mr. Balmanno Squire, for the treatment of cutaneous nævi or port wine marks has not in my hands proved very successful. I am inclined to think that many others have similarly failed to benefit by linear scarification these distressing deformities.

But I must hasten to other important matters. In injuries of the head, attended with fracture of the skull, the dicta of the old nestors of surgery have been materially modified. In the times of our fathers, a man stunned by a fall from the horse in the hunting field was at once "trepanned." At the present time, the rule is in simple fractures of the skull to await the onset of symptoms—symptoms which very frequently, I think, do not arise at all in cases which a few years ago would have been exposed to the risk of trephining. Mr. Gamgee, by his papers in the *Lancet*, has contributed not a little to this change of practice. In connection with this subject, I must allude to a paper in the *British Medical Journal* last month, by Dr. Yeo, on the subject of the application of antiseptic dressings, to cranio-cerebral surgery. Dr. Yeo sums up his paper as follows:—"Amongst the cases healed antiseptically, there was not one case of inflammation, and where this method could not be used, there was intense encephalitis; or if the numbers be reduced to a percentage, we find that 100 per cent. under antiseptic dressings were cured without any inflammation of the meninges, and 100 per cent. without antiseptic dressing died of acute encephalitis."

The surgical treatment of aneurism has been materially modified during the past ten years. The safety afforded by the antiseptic ligature has tended to increase the employment of operative measures in place of compression in its various forms—flexion, and the employment of Esmarch's bandage.

The certainty and safety attending the treatment of popliteal aneurism by ligature of the superficial femoral leave nothing to be desired. The late Professor Syme, before the employment of antiseptics, had performed this operation between 30 and 40 times without a single death. I have had at least five cases, and have seen many others: in no case has there ever been a death fairly to be referred to the operation. You will pardon my mentioning one especial operation which has not the claim of novelty, because it is an operation in which this town is peculiarly interested. In October, 1806, George Freer ligatured successfully, for the first time in England, the external iliac artery; Abernethy's successful case occurring seven days later. Since that time the operation had never been repeated at the General Hospital until May, 1871, when it was successfully performed by Mr. Oliver Pemberton; and about the same time Mr. Pemberton had a second successful case in private. Mr. West has had a successful case at the Queen's Hospital, and in the year 1879 I successfully ligatured the external iliac for recurring secondary hæmorrhage, after ligaturing the common femoral for an aneurism in Hunter's canal.

Mr. Furneaux Jordan has, I believe, also had a case of ligature of the external iliac at the Queen's hospital.

The proposal to treat aneurism inaccessible to treatment by either proximal or distal ligature by manipulation has not, I think, found much favour. Mr. Pemberton reported two successful cases in 1871. The risks of embolism are too great to justify the employment of this manœuvre as a recognised surgical operation, and the cures following its use will usually be fortuitous surgical accidents. Aneurisms of the aorta, and the large vessels in the thorax, are undoubtedly amenable to treatment either by distal ligature, or by electro puncture. Of the

latter expedient, I had a remarkable example last year in a case of my colleague, Dr. Foster. An aortic aneurism, bulging through the sternum and pointing, was cured by two applications of the needles, the tumour becoming quite flat, and pulsation in it disappearing. The patient, however, died ultimately by the extension of the aneurism backwards.

The subject of stone in the bladder is always one of interest in this district, where it is or has been so common. I argue from the fact that cases so rarely present themselves now in hospital practice, that the quarries are well nigh worked out. The recent discussion on lithotomy and lithotrity in the metropolis demonstrated the opinion of the profession, that lithotomy was still *the* operation for stone. In connection with lithotrity, we must ever bear in mind that it chooses only the cases of moderate sized stones in healthy bladders, and in men of healthy constitution. It selects indeed those very cases that would, under the operation of lithotomy, almost inevitably and invariably recover. The mortality after lithotrity ought, therefore, to be small indeed.

The median operation devised by Mr. Allarton, a surgeon in this district, is, I think, less employed than formerly. Of Bigelow's operation of rapid lithotrity I have no personal experience. It is well spoken of and appears to be successful. The appearance of the instruments used would impress one that it is by no means a slight operation.

In connection with the subject of lithotomy, I must mention the proposal of our former president, Mr. Furneaux Jordan, for making the deep incision in an upward direction. Coming from Mr. Jordan the proposition is certain to be ingenious, and to be based on correct anatomical grounds. I do not doubt that cases will occur

in which this incision will prove advantageous. In the cases in which it has been employed the operation has proved successful. At the Children's Hospital, Mr. Thomas has in several instances performed the suprapubic or high operation for stone, and with, I believe, a fair amount of success. In Birmingham the operation of lateral lithotomy has been attended with unusual success. The mortality in my own cases is 2 in 50.

Before leaving the consideration of urethral surgery, I would wish to express my appreciation of the importance of the formulation by Mr. Wheelhouse, of Leeds, of the details of the operation of external urethrotomy. An importance only second, if indeed it be second, to the devising of the operation by Professor Syme. This formulation by Mr. Wheelhouse renders fairly easy an operation which Syme himself characterised as one which should be begun in the early morning of a long summer's day.

The operation of nephrotomy, nephrectomy, and nephrolithotomy, are now recognised surgical procedures. Mr. Alfred Baker, my senior surgical colleague, tells me he has recently had a successful case of the first named in private practice.

The advantages of formulating the steps of operations or of treatment, is seen in a pamphlet by Mr. Lund, on the Walter Whitehead method of removing the whole tongue by scissors, a plan which I have proved not only to be feasible, but eminently satisfactory. Similar advantages are also seen in Mr. Jordan's rules for the treatment of surgical inflammations by counter-irritation, and by Mr. Gamgee's formula for the treatment of wounds: by rest, position, pressure, and dry dressing. Among modifications of operations, I must not omit to mention Mr. Furneaux Jordan's proposal to catheterise in cases of stricture from

behind the structure, or his invaluable modification of the method of amputating at the hip joint.

In the treatment of fractures, variations in detail are constantly occurring, while the principles of treatment remain the same.

The starch stocking is a simple and convenient way of applying the starch or dextrine bandage, and Hyde's felt splints leave nothing to be desired as far as elegance, comfort, and convenience are concerned, though they are handicapped by their cost in hospital practice. In the treatment of surgical hæmorrhage, with us the employment of acu pressure has quite ceased, and to a great extent the use of torsion also. The use of the carbolised catgut is universal, both in antiseptic and open cases, and at the time of application, and subsequently it is perfectly reliable and in every way satisfactory.

Operations for the radical cure of hernia, especially by Wutzer's method, were very common a few years ago. They are now seldom performed, nor has the very ingenious, though somewhat complicated, procedure of Mr. John Wood met with general approval. A safe and successful operation for these cases has been devised by Mr. Spanton, of Hanley, but I have no personal experience of it. The operative treatment of loose cartilage in the knee joint has been revolutionised by antiseptic surgery. Cases of this painful affection were, in times gone by, consigned to a life of discomfort, if not of suffering, on account of the risks of operative interference. Various procedures were devised to lessen these risks. It is one of the most marked triumphs of antiseptic surgery, that these operations are now undertaken, not only without risk, but also with a *certainty* of being free from risk. I have had several of these cases. Their operative treatment has given no anxiety, and has resulted in recovery almost invariably with a moveable joint.

In the treatment of dislocations, the last ten years' practice has been a more frequent employment of manipulation and the more rare use of pulleys. Even in old dislocations manipulation is more easy and more successful than mechanical means. I have thus reduced a dislocation of the shoulder of 7 weeks' and a dislocation of the hip of 5 weeks' standing.

The employment of antiseptics justifies us in investigating by incision those obscure and often intractable cases of dislocation of the phalanges of the thumb or fingers. I have in two cases lately been enabled by these means to effect reduction which would, I think, have otherwise proved impossible.

But to conclude my eulogy of antiseptics, which I fear may be wearisome, I must allude to antiseptic osteotomy. What subcutaneous operations have been to tenotomy, antiseptics are to osteotomy; and although bones had been previously divided both subcutaneously and through open wounds, it is unlikely that the practice of thus treating deformities would have become general had they not acquired safety and certainty from association with the antiseptic principles and practice. With strict Listerian precautions we are able to make compound fractures in the legs and thighs, at least four in a patient, with apparently no risk to life or limb; indeed with almost entire absence of surgical fever, we are able to chisel off the inner condyle, causing voluntarily what used to be considered not a serious, but commonly a fatal injury; to wit, a compound fracture in the knee joint, and wonderful to relate, a cure results with the movements of this important and complicated joint absolutely unimpaired. We are able to treat with success otherwise incurable cases of talipes, by calmly and deliberately, and regardless of articulations, cutting or

sawing a wedge from the dorsum of the foot. The case is subsequently dressed only two or three times before recovery is complete! and all this without any rise of temperature of our patient; indeed, so safe appears the operation of antiseptic osteotomy in children, that I am told by my colleague, Mr. Chavasse that it is not unfrequently performed in the out-patient room of our hospitals—these multiple compound fractures being treated in out-patients.

During the past ten years operative surgery on nerves has greatly advanced. For a long period it was held as a surgical dogma that divided nerves did not unite, at all events did not join, so as to convey sensory or motor impressions.

The practice now universally adopted of suturing, where possible, divided nerves, has proved the fallacy of this dogma by the record of numerous cases of recovery of the power of transmission through such nerves of motor and sensory impulses.

Nerve stretching for neuralgia, and also for chronic spinal disorder, is a somewhat new operation. I have stretched nerves in many cases—twice in the same case for painful stump with no benefit, and once in a similar case with the result of cure.

I have stretched the sciatic nerve three times, in two cases with the result of perfectly curing long standing sciatica, and in another with absolutely no benefit to the patient. I have no experience in the operation of nerve stretching in chronic spinal disorder.

The discovery by Professor Sayre of a novel mode of treating cases of spinal curvature, has placed at our disposal a means of treating these cases less trying to the patience of the sufferer, less injurious to his general health, and at the same time immensely more beneficial to the local

condition than was the employment of the prone or supine couch.

Of the many modifications of Sayre's appliance, I confess myself a preference for the poro-plastic case over the plaster of Paris one. The poro-plastic case, applied with the aid of suspension, may, if desired, be opened or even removed at intervals, for the purposes of ablution, or can be "eased" if the patient increase in size or in bulk, and if its removal be required for the investigation of the patient, it can be easily reapplied. The first application is more troublesome than that of the plaster case, and it requires heat, and subsequently great celerity during the operation of application.

The statistics of schirrhous of the breast of Dr. Gross, of Philadelphia, in his recent valuable monograph on this disease, give a most encouraging view of the result of operation, the permanent cures being recorded as one in five operations. If a case of removal of the breast remain without recurrence for three years, its recurrence after that period is proved by Prof. Gross' statistics to be very unlikely.

I must not omit to mention Mr. Clay's treatment of cancer by Chian turpentine, a plan of treatment which, it is singular, is strongly believed in or as strongly discredited. I confess I fail to see the impossibility that some do in the proposed plan of treatment. Mr. Simon, in his masterly address a few years since at the Midland Medical Society, urged his hearers to try many and various drugs in the cure of this fell disease, both locally and generally, since he could see no reason why some remedy should not be found as capable of removing the neoplasms of cancer, as mercury is capable of removing the neoplasms of syphilis.

Of surgical specialties I can say but little, inasmuch as I

know but little. Indeed I am incapable of assessing the advance in ophthalmic and aural surgery. From the known ability and industry of the specialists in these branches here and elsewhere, I cannot doubt that great advances in these special branches of surgery have marked the last ten years. What I have said about osteotomy will have shown the progress in orthopaedic surgery, while Professor Sayre's invention, as giving to surgeons devoting themselves to the treatment of bodily deformities a means of treatment which nothing in their department has equalled since the introduction of subcutaneous surgery.

The rise of abdominal surgery during the past ten years has been so rapid, so pronounced, so permanent, and the irrefragable testimony of statistics proves so successful and beneficent, that I must not omit its brief consideration, and the more so, since it seems to me not only to be a specialty of a most legitimate kind, but one which involves general as well as uterine and ovarian surgery. The operation of gastrotomy has been performed in Birmingham at the Women's Hospital, with, I believe, unparalleled success, and has done much to demonstrate the absence of risk attending this exploration of the peritoneal cavity. The safety of this operation will, I believe, induce every conscientious surgeon to give a patient suffering from intestinal obstruction, due to an unknown cause, a chance of relief, and the earlier this is done the greater the chance. Indeed, Professor Bilioth has, within the present year, on three or four occasions, opened the abdomen and excised a schirrhous of the pylorus, and at least, on one occasion, with success; and I do not doubt that surgeons will feel, and will be justified in opening the peritoneum, to treat locally an ulcer of the stomach, which is otherwise intractable, and likely to cause death ;

or will perform the same operation for the removal of intra-vesical growths, and for the treatment of abdominal aneurisms.

The operation of oöphorectomy has received a great impulse throughout the world, from its frequent performance at the Women's Hospital, by Mr. Lawson Tait and Dr. Savage, and I doubt not that their experience will be a material factor in forming an opinion as to the propriety and utility of the operation.

In connection with abdominal surgery, I must mention remarkable cases of extra-uterine foetation, operated on by Mr. Lawson Tait, Dr. Savage, Mr. Ross Jordan, and Dr. Malins, and a still more notable case under Mr. Jessop, of Leeds, which eventuated in the saving both of mother and child; and I must allude to Mr. Tait's cases of operation by gastrotomy for hydatids, abscess and slough of liver. Mr. Tait has already treated several of these cases, all of which have recovered; and I must not omit to mention that the operation of splenotomy has twice been performed in this district during the last few years, once by Mr. Spencer Wells, and once by Mr. H. L. Browne, of West Bromwich, in neither case, however, with successful result.

During the past ten years, I do not think that any important advance has been made in the many matters affecting most seriously the interests of the medical and surgical profession.

It has been said words were given to conceal thoughts, instead of to express them. Surely the office of committees, councils, and commissions, is to hinder progress instead of to expedite it. We seem as far as ever distant from medical reform, the already far too long delayed consideration of this burning subject is, I fear, adjourned *sine die* by the indirect means of appointing a royal commission for

its consideration and postponement. The costly and somewhat useless General Medical Council seems to talk as much as it can, and to do as little as it can for its money, a condition that will, I suppose, continue until the profession collectively *insists* on the practical application to it of the great ethical law that taxation and representation shall go together. Why *we*, the members of the profession, should have to pay all the costs and should have no direct representatives, while the corporations, whose shortcomings the council ought to detect and check, should pay none of the expense and should have, practically, all the representation, is only less marvellous than the fact. That we have known this for years, and have fully appreciated the impropriety and the inexpediency of the condition, have known our strength as a profession, individually and collectively, and yet we have tamely submitted and have calmly put up with the manifest gross injustice of such a condition.

Medical education has been vexed and irritated by constant changes and inspections, but, I think, has hardly improved, and probably will not do so until the one portal system prevents idle men who fail at one examination at once presenting themselves at another less stringent. I cannot but think that the present student of medicine is an ill-used individual: frequently over-taught, invariably over-lectured, and usually over-examined.

Perhaps a time may come when even examiners may cease from troubling and even students be at rest; but I doubt it will not be in this sphere, or in this epoque; a time when our governors in these matters, the august councils of our medical corporations, will have grace given them to see that their duty is to decide when a man is

competent to practise his profession, regardless of how or where he became competent ; to simply settle by their examination that a man possesses a sufficiency of knowledge of certain subjects, without regard to how or where or when he obtained his knowledge ; that they may open their eyes to the fact that one man may learn his work well in a country surgery, while another may fail to learn it at all at a great college, or well officered and extensive hospital.

The sanitary improvement of our hospitals has been a marked feature of the last ten years. The old condition of matters would have been little short of criminal had it been due to simple negligence, or to any other cause than the universal ignorance of the factors necessary for health. The prevention of sewage contamination, the regulation of temperature, and the avoidance of overcrowding, the alteration from the layers of sick in hospitals to well warmed and ventilated wards, with a due supply of air to each patient, has reduced hospital mortality enormously ; but is it certain that the mortality is even yet at its minimum, or that perfection in hospital architecture and arrangements is even yet reached ? I trow not. Certainly in hospital administration, we can as yet make no claim to such perfection ; at all events, so far as the rights of the profession, either of those attached to the hospital or those unattached are concerned. Nor can we pretend to do so, as long as out-patient rooms, and too often the wards contain patients able and often willing to pay for attendance. I doubt not that great injustice is thus done to the general body of the profession ; but I firmly believe that at least equal pecuniary loss results to the members of hospital staffs. The erection and management of great educational institutions such as the Midland Institute and the Mason College in this district, are a glory to our

town, and an enduring trophy of benevolence, and of liberal and enterprising endeavours to benefit every class of the community, by offering such splendid educational advantages. But I contend that not only the interests of our underpaid and overworked profession, but also the moral consideration of the tone of the classes who depend on free relief as obtained at hospitals, demand that the present system of pauperising the public be at all events carefully enquired into, with a view to securing free aid only where free aid is required, and due payment where such is fairly to be claimed, and can be suitably borne. We have in our false modesty too long tolerated an injustice, which has tended to render the medical the poorest of all the learned professions, which has sapped the life and energy of innumerable able and industrious men, and has left to undeserved and unnecessary indigence their widows and children.

The last important instance of professional progress during the past ten years that I can afford time to allude to, is that displayed in the vigorous growth of the British Medical Association. Its enormous development enables it fairly to consider itself not only the *representative* of the medical profession, but the *embodiment* of professional feeling and professional policy; while its solid and substantial financial position, combined with the ability and fairness of its organ, the British Medical Journal, augur well for a still greater success, and a still greater power in the next ten years.

Gentlemen, in surgery, at all events, the period has not yet arrived for us to rest and be thankful, rather must our much loved art continue to be imbued in the future, as it has been in the past, with the spirit illustrated by the motto of this great town, "Forward"; I would, as my last word, suggest that, for the attainment of social,

political, and even professional advancement, we must ever remember and act upon the adage which expresses at once, briefly and forcibly, a principle of action of which our great association is a living example and a sublime triumph, viz., that "union is strength."

ON THE TREATMENT OF PLEURISY AND PLEURITIC EFFUSIONS.*

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WHEN the President paid me the high compliment of asking me to address the members of the North Wales Branch, I mentioned two subjects, on which I thought, I might possibly record my experience with some slight advantage. The two subjects were, the treatment of aneurism by galvano-puncture, and the treatment of pleuritic effusions. In deciding upon the latter, your secretary made a wise selection, for cases of pleurisy with effusion are undoubtedly more common than aneurisms: and there are no cases in my experience which cost us more anxious thought, or in which more important issues, as regards the future, depend upon our counsel and our action.

Before I enter on my subject, I should like to say, by way of preface, that I have no original or even novel views to enunciate, but simply a plain statement of practice, put in a form that may, I hope, elicit discussion. My object in being here is to call forth the opinions of others, even more than to state my own, so that from the

* An Address delivered in opening a discussion on this subject at a meeting of the North Wales Branch at Chester, on May 31st, 1881.

general experience we may learn something useful for our daily work.

I must also ask the members to pardon the dogmatic form in which some of my remarks may be expressed. The short time at my disposal forces me to omit, as far as possible, all argument. That will come, I trust, in the criticism my paper calls forth.

First of all, I should like to express my strong conviction that effusions into the pleural cavity are much more frequent now-a-days than they were formerly. I have seen more cases during the last ten years, than I did during the first ten years of my practice in the Birmingham hospitals. When I was a student, and clinical assistant to Dr. Stokes, at the Meath Hospital, the cases were few. I saw as many in a year, as I can now count at one time in the wards of the General Hospital. This greater frequency I cannot refer altogether to our more accurate diagnosis. This is no doubt the explanation in many cases; mostly, I believe, in the cases of comparatively small effusion: chronic cases that used to be regarded as unresolved pneumonia. It does not, however, account for the large effusions so often seen: cases that one is called to in consultation, and in which one finds a chest full of fluid, and similar cases that come to the hospital after a few weeks' of unsuccessful treatment. I am therefore forced to seek some other explanation of the occurrence of these large effusions, and I find it in the change that has come over our treatment.

When I was an apprentice, a man would come into the surgery with the sharp stabbing stitch of pleuritic pain, and when we had examined the chest and heard the friction, there was no discussion as to treatment. Several ounces of blood were taken from the arm: as the blood flowed the pain grew less, the breathing deeper, the pulse softer

and fuller, and the patient walked home grateful for rapid relief, that nearly always checked the inflammation and was seldom followed by effusion. Now-a-days such a case is too often treated on opposite principles, and a linseed poultice and liq. am. acet. or mint water are the somewhat mild measures with which we meet the onset of disease. Measures, I would say, in most cases, as impotent for good, as in some instances the old means were potent for evil.

I have no sympathy with the therapeutic nihilism that has so blunted the keen edge of our practice. The duty of a doctor is to treat disease, and not merely to observe it. I am sure that if he once begins to disbelieve in treatment, his ardour for scientific observation will soon be cooled; for it is not human nature to expend time and thought over a diagnosis, that leads to no difference in practice. How long will a man, who has too little time to get through his work, continue to spend precious minutes in trying to distinguish a pleurisy, from a liver complaint or a pneumonia, when in either case he will order some mint water and a poultice?

Strongly convinced that expectancy has to answer for many of the pleuritic effusions that we meet, I have myself, for the last few years, gone back to leeches and cupping in all cases of pleurisy seen in the early stage, and to blisters when the effusion is beginning: and I am sure with benefit. Nothing will cut short and limit the inflammation like free leeching or cupping, and when the pleural blood vessels have their contractility worn out by inflammatory irritation, and have become passive channels gorged with blood, that pours out its more fluid elements freely into the meshes and on the surface of the inflamed tissue, then the sharp stimulus of a blister whips these vessels up to a renewal of their tone: their contraction checks the growing effusion, and is often the first step to

its removal. Blisters have been forbidden in pleurisy in the acute stage by some, because forsooth, certain poor animals who were blistered in health were found, when dead, to have reddened pleuræ beneath the blisters. Exactly: the healthy vessels irritated by the blister, dilated and reddened the pleuræ, but a similar stimulus to the over-distended vessels, pouring out serum, is the one thing wanted to restore a healthy tone and check the outflow.

I will now pass on to the main question of my paper: the treatment of effusion in cases of acute pleurisy, when in spite of the measures I have indicated, or more commonly in their absence, it has occurred. On what drugs should we rely? Well, we should bear in mind that in some few cases absorption of the fluid begins to take place as early as sixth to the tenth day, but more commonly it is from the 15th to 20th. The treatment then between the sixth and twentieth days must be mainly addressed to promoting the absorption of the effusion. Now counter-irritation by means of blisters or iodine is very useful, and should always be tried to the extent of one or two blisters, or two courses of iodine paint. We are often disappointed by these revulsives for reasons I shall explain further on. Salts of potash with vegetable diuretics (first among which stands digitalis, the most valuable of drugs in these cases) often prove our most trustworthy remedies.

Drastic cathartics and emetics are sometimes useful. Those of the older faith often rely on mercury. Combined with digitalis and squill, it is often valuable, as it is in other cases, in the form of the perchloride, associated with iodide of potassium. Practitioners of the youngest school vaunt the sudorific virtues of pilocarpine and jaborandi which will often remove the more limpid effusions in the earlier days.*

* I have not referred to strapping, valuable though it be in suitable cases, as it hardly comes within the scope of this paper.

Now all these remedies are revulsive or derivative. They aim at procuring absorption of the fluid, and its removal from the body, through the natural channels of excretion. To render this possible, it is essential that there be a pleural surface capable of absorbing.

Now this is the very element that is lacking in most cases of acute inflammatory pleurisy. The pleura of the collapsed lung has shrunk to a small surface, and what is left is usually covered with inflammatory growth. The parietal pleura retains its natural extent, but on it has grown layer on layer of false membrane, which renders it useless for absorption. When the ordinary inflammatory congestion is past, revulsives can do nothing to make such a membrane absorb. Diuretics, purgatives, and diaphoretics, can hardly ever so modify the circulation in a thickened pleura, as to rapidly promote evacuation of the fluid. In my experience, when these remedies act well, it is in cases in which the inflammatory new growth has not affected a large surface of the pleura, and in which the effusion is in excess as compared with the growth of new membrane on the parietal and visceral folds. These are the cases which our drugs cure ; the cases with thickened pleura are the cases that remain stationary after the fever has ceased, and up to the 20th, even to the 30th day, shows no signs of absorption.

In them we observe a quick small pulse, a dry skin, and scanty urine. The pulse is quick, because the oxidation of the blood has to be carried on by one lung, and consequently to keep up the necessary oxidation, the heart has to drive the blood more often through the limited oxidising area. The heart force is used up in gaining a rapid pulmonary passage of a small blood charge to the left ventricle, so there is a small quick pulse, with low arterial tension, and in this we have the conditions that

keep the skin dry, and the urine scanty. The free passage of blood to the left chambers of the heart is hindered by the compression exercised by the fluid on the pulmonary circulation; enough blood cannot get through the lungs to raise the pressure, in the surface or the kidney capillaries, sufficiently, to produce either sweating or diuresis. When digitalis acts well, it is by giving the heart extra power to overcome the pulmonary impediment. Increased pressure in the arterial system results, and with it increased secretion of urine, often the first sign of absorption, as it is the most precious evidence, together with a slower pulse rate, after the operation of tapping, that the lung has expanded and an easier passage of blood through the lung circulation has been gained.

Now it is these cases of greatly thickened pleura which resist our drugs and require tapping. How then are we to recognise them? The sooner we do so the better, for every day allows the false membrane to grow more organised and to bind down the lung more firmly in its fatal folds.

The amount of fever and its continuance may generally be taken as a measure of the intensity of the inflammation, and the more intense this is the more fibrinous the effusion, and the more thick the false membrane. The line of dulness, in the upright position, often helps; being curved from behind and above, downwards and forwards, in the thicker effusions, and assuming a more horizontal line in the more fluid ones. But these, and certain auscultatory means of testing the nature of an effusion, are comparatively speculative and sink into insignificance, when compared with a simple and harmless method, that at once demonstrates the nature of the fluid, and places it under our very eyes. I allude to the use of the hypodermic syringe. Whenever I have a case of

pleuritic effusion, about which I have any doubt as to its character, and nearly always too when I have no doubt, I make a puncture with the syringe. The depth at which fluid is drawn is often useful, as a guide to the thickness of the false membranes, and in the more chronic cases, the sensation conveyed to the finger tells if the inflammatory products are tough and fibrous, and consequently unfit for absorbing, or if they are thin, soft, and non-resistant. The fluid withdrawn informs us by its more or less rapid coagulation, by its physical appearances, and by its amount of albumen, the character of the effusion, whether it is one likely to be absorbed, if the membranes are fit to absorb it, or whether it is one already purulent or on the way to purulent transformation.

The free and bold use of this instrument, which, with ordinary precaution, may be plunged almost anywhere with impunity, is I would say *essential* to the correct study of pleuritic effusions.

Cases of acute pleurisy ending under our observation in effusion, which remains stationary up to the 20th day, are cases in which thoracentesis must be considered. But before this time the operation may be urgently required. We have, therefore, the operation of urgency, and the operation of choice. 1st, let us briefly consider the question of urgency.

Urgency must be determined by the amount of effusion—whether the patient has fever or has it not; whether he is oppressed by the effusion, and has dyspnœa or not—these are considerations of a second order; above all we must be guided by the quantity of fluid (Dieulafoy). Dyspnœa is a deceptive sign; it is often great when the effusion is slight, and even with its increase may grow less. Patients will sometimes walk to the Hospital with 2 or 3 pints of fluid in the chest. To wait for dyspnœa

in such cases may lose the patient. The operation of to-morrow, is often the operation of never. Cases of sudden death in pleuritic effusion most of us have seen. I shall never forget the first I saw. Some years ago as I went through one of the wards, I saw a young man leaning across the back of a chair breathing rather rapidly, waiting to be bedded by the nurse. I asked the House Surgeon for what he had been admitted, for he was not my patient, and the answer was, his side is dull, he has pneumonia. The next morning, in my capacity of Pathologist, I found the lad's body in the deadhouse. He had died suddenly soon after being put to bed, and his right pleura was full of fluid! I will not enter into the causes of these terrible deaths. They are mentioned only as warnings, that whenever we have a large effusion, we have the risk of sudden death. The question naturally occurs how large are these effusions that cause death? Well, there is, I believe, no death recorded in an adult with an effusion of less than 3 to $3\frac{1}{2}$ pints. An effusion of $3\frac{1}{2}$ pints indicates that urgency is present.

Now comes the other question: how do we estimate the quantity in the patient? Well, Dieulafoy has worked out this for us, and he tells us that the best sign is the height of dulness. The signs on auscultation are less trustworthy, dyspnœa is often deceptive (although orthopnœa should always suggest the presence of a large effusion) therefore the height of dulness should guide us. When the dulness reaches behind, as high as the spine of the scapula and the subclavian resonance is replaced by dulness, and if in left pleural effusion, the heart is so displaced that the apex beats to the right of the sternum, *we may conclude that the pleura contains over 3 pints, and we should tap at once; to delay is possible death.*

We may now consider the cases in which thoracentesis

is open to discussion : the operation of choice. It will be advantageous to consider these cases in two classes ; the acute and the chronic cases. By the acute cases I mean those that have been under our observation from the beginning of the pleurisy, or that come under treatment within three or four weeks of its onset.

In these cases there is often fever still present, and it is a good rule not to tap for any except a very large effusion, such as those previously referred to, while the fever of the inflammation continues. I do not mean the pyrexia of an empyema, but the fever of the pleurisy which may extend beyond the 3rd week.

If the fever has fallen, and the fluid does not grow less after the 3rd week, or even if the absorption is exceedingly slow, the operation is justifiable. Every day adds to the risk of the lung not expanding, as the false membranes become more organised. Daily the functions of oxidation, and blood renewal and purification, are hindered more and more, and the reserve strength of the patient is diminished. The risk of purulent change must also be regarded—a change that in my own experience can in no case be referred to aspiration. In these cases I have often regretted postponing or omitting the operation of thoracentesis : I have never regretted its performance. The practice I would suggest is—*that in all cases of acute pleurisy in which there is free effusion, say $\frac{1}{2}$ to $\frac{2}{3}$ of the pleura, as indicated by the height of the dulness, we should tap if no absorption begins with the fall of temperature, or before the 24th day.* If the hypodermic needle—and it should be used as a preliminary in all these cases—draws forth a fluid tinged with blood, and containing some red cells and many white, we have to do with an effusion likely to become pus, and the operation is all the more urgent, and when carefully performed with the

aspirator does not encourage purulent change. The early evacuation of the fluid gives the lung the best chance of expanding, and if suppuration follows, the cavity we have finally to deal with is so much the less.

In all these cases, and in most other cases, the easiest, the safest, and the most scientific method of tapping is aspiration. Whether we have the operation of urgency or the operation of choice, I would say, use the aspirator. A previous puncture with the hypodermic syringe will tell us the nature of the fluid, and guide us in the choice of a needle. It is seldom, however, that a larger needle than No. 2 of Dieulafoy's is required. The spot for puncture may vary with the case, but in a large effusion I usually select the 7th or 8th interspace below the angle of the scapula. The fluid should be withdrawn gradually, slowly rather than rapidly. Any complaint on the part of the patient of constriction about the chest, or pain, or difficulty in taking a deep breath, should warn us to stop; and we should not, as a rule, *draw more than 13½ pints at a sitting*.

Now let us consider the chronic cases that come under observation many weeks, sometimes many months, after the pleuritic inflammation.

Dr. Wilks, in a very valuable paper in 1879, pointed out how these cases of unresolved pleurisy, the remnants of an ill-defined chest attack, are too often supposed to be pneumonia, and are consequently left alone. I agree with him that if "from an inflammatory attack in the chest, under whatever name that attack may be called, there result localised dulness, with absence of breath sound, and perhaps distant tubular breathing," a pleuritic effusion may be diagnosed. I would not say, as he does, an empyema, because the hypodermic syringe, which I always use in these cases to demonstrate the diagnosis, has taught me that the fluid is

very often not pus. If left alone, it will generally become pus, and evacuate itself through the lung, often killing the patient in the process; but when these cases come under observation some weeks after the acute attack, the fluid is generally serum. Guided by the revelations of the syringe, it is our duty to evacuate the fluid. It may be serum, it may be pus. If serum, a single tapping may suffice, as in acute cases: the lung expanding and adhesion taking place, a cure is effected. Sometimes, as is more frequent in acute cases, the removal of a portion of the fluid allows sufficient lung expansion to enable the heart to drive a larger charge of blood through the pulmonary circulation with each systole, and thereby to raise the tension in the systemic arteries sufficiently to flood the kidneys, promote diuresis, and so procure absorption. More commonly repeated tapplings have to be performed; less is drawn out at each succeeding time, and eventually the fluid is replaced by expanding lung, or the cavity contracts, fills with connective tissue, and more or less chest shrinking is the result.

But if the syringe shows the fluid to be pus! how are we then to proceed?

Purulent pleurisy, or empyema, presents another problem. Here the foreign fluid is a pathological product not likely to be absorbed, and one which will repeatedly collect in the pleural cavity. Draw it off by the aspirator, and it will usually come again; to this there is not often an exception. The treatment is then like that of any other abscess, essentially surgical.

We may tap with the aspirator; we may tap and wash out the chest with some corrective fluid; we may pass in a drainage tube after tapping, or a canula and wash out daily; we may drain the chest by means of a tube passing through the cavity; or we may perform the operation

for empyema, and make a free incision between the ribs, as low down as we can, and so evacuate the inflammatory products. Now I will not venture to weigh the merits of all these plans, I will simply state the practice I have followed.

First as to repeated aspirations. In acute pleurisy ending in suppuration, I always aspirate two or three times, unless the condition of the patient becomes grave after the first tapping. I aspirate because sometimes a single tapping will cure. The pus is withdrawn, the lung expands, the pleural surfaces adhere, the case is cured. Such cases are on record, and one such happy case occurred to me in a child some twelve years old, whom I saw in consultation with Mr. J. P. Bradley. It was purulent pleurisy of the left side. We drew with a No. 2 needle some 20 ounces of pus, thick, creamy, laudable pus. It never collected again, and the child made a perfect recovery. In children this does happen, and be it child or adult, we should, I think, when no contraindication exists, such as the decomposition of the pus, give the patient this chance.

Further I would say, that in some cases three or four tapings at shorter intervals enable us to lessen the size of the cavity to be eventually drained; this is a gain of no small importance. In some cases that I have treated in this way I have been able to cure with a single opening and a drainage tube or canula, aided by occasional washings with weak carbolic water. In one of the worst cases of purulent pleurisy that I have met, a young man whom I saw in consultation with Mr. May, of Reading, we aspirated with great advantage six times, withdrawing from 40 to 15 oz. of pus, always laudable: and eventually the case was cured by a single opening in which a canula with a plug was kept. The small cavity thus left to be

drained from a pleura originally full of pus, secreted serous fluid the day after the canula was introduced, and the case made a rapid recovery, with eventually complete lung expansion. So perfect was the recovery that three years later this patient won the prize at his college for putting the weight. The whole of the last operation and subsequent dressing of this case, which occurred in 1875, were performed by my colleague, Mr. Goodall (as the patient had been brought home from Reading), under strict antiseptic precautions; precautions that I would always advocate in similar operations.

In cases of empyema of longer standing, or those which show no sign of contracting, or in which the pleural cavity contains pus undergoing septic changes, the plan we adopt at the Birmingham General Hospital is that of making two openings in the chest-wall, and passing a drainage tube through the cavity, generally from the front to the back of the chest. This operation is difficult, on account of the trouble the surgeon has in passing his tube from one opening to the other. It may not seem difficult, but in practice it is found extremely so. My colleague, Mr. Bartleet, has devised a very happy method of doing this operation. He makes the two openings: one low down in the 7th or 8th interspace, generally posteriorly, and one higher up and more to the front of the chest. Into the one he passes a large grooved director, and into the groove he receives a probe passed through the other opening, carrying a ligature to which the drainage tube is attached. The probe is readily passed along the director, drawn through the chest and with it the drainage tube. By means of these two openings, the drainage is rendered complete, the cavity of the chest can be readily washed out, and the collection of any quantity of pus prevented

by daily dressing. In washing out the cavity, it is well to use an irrigator, and allow the fluid from it to pass in by a separate tube, and discharge through the drainage tube. If the drainage tube is used alone, the fluid sometimes will flow along it, and by not penetrating and flooding the cavity, fail to cleanse it.

In the most successful cases the lung gradually expands, and by it and the growth of connective tissue the cavity is filled up. In others there may be no attempt at expansion. In two such cases, one tapped for purulent pleurisy as early as the 25th day from the onset, the lung was, on *post-mortem* examination, scarcely recognisable, being glued to the spine by layers of new growth, beneath which the pulmonary tissue formed a scarcely appreciable mass. In such cases, and in cases not so hopeless, resection of a rib offers a means of facilitating the retraction of the chest wall. This operation is also useful when the approximation of the ribs from sinking of the chest wall, renders it difficult to find space for the drainage tube. These cases may go on for many months with pleural fistulæ, but with careful dressing they eventually heal and make good recoveries.

In some cases, however, small openings and the insertion of a drainage tube are insufficient. The pleural cavity contains large loose masses of false membrane and pus, which continually undergo decomposition, and the patient suffers from, or is exposed to, the risk of purulent infection. Under these circumstances the pleura must be opened freely. The incision may be the extension of one of the drainage apertures. The posterior one is the better as the incision is best made behind. When made independently the eighth space should be chosen. Through the wound, which should be two and a half inches long, the pleura can be washed out freely, and the

debris and decomposing products dislodged. The wound must of course be kept open, and by a syphon arrangement the pleura can be very safely and thoroughly washed out, and the suppuration rendered healthier and lessened. The after progress of cases requiring this operation is, when successful, such as I have previously referred to, retraction of the chest wall and partial expansion of the lung.

These, gentlemen, are the points I would submit to you for discussion. I may seem to have dwelt at undue length on so simple a subject as tapping for pleuritic effusion, but if any justification is needed, I find it in the thought, that it is now some 2,300 years since the Father of Medicine discussed this operation, and yet we still see the most able and accomplished practitioners occasionally doubtful as to its desirability. Even now one hesitates, and I think wisely, to lay down hard and fast rules for its performance, for the units in human pathology are so infinitely variable, and so wonderfully complex, that each case requires its special study. Long experience becomes in this way the best check to hasty generalisation. It is this complexity of the phenomena we have to study that makes the progress of medicine so slow. We feel impatient at it, but we should remember, that it is this same characteristic that gives its fascination to our work, and renders pathology and therapeutics subjects of such surpassing interest. If by our discussion to-day, we advance one little step in the solution of a problem, that has occupied the thoughts of the greatest and the wisest, we shall not have met in vain.

ON THE EXTRACTION OF CATARACT BY
SMALL ANGULAR FLAP AND THE LOWER
SECTION.

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THE very general adoption by modern ophthalmic surgeons of Graefe's linear operation for the extraction of cataract might lead to the assumption that the evidence in favour of its superiority over all other operations for the same purpose is conclusive. The fact, however, that so many modifications of the original operation exist, each operator in extensive practice having almost invariably some modification of his own, shows that whilst the general principle may be accepted, the details are still under discussion.

The linear method, of which it was once written "nothing now remains of the original operation but the knife," presents enormous advantages when compared with the old flap operation but has in turn some marked imperfections. This view has impressed itself strongly upon the minds of many ophthalmic surgeons, and repeated attempts have been made to effect a compromise. Bader, Warlomont, Liebreich, and others, have devised operations which they intended should possess the

cosmetic advantages of the flap operation combined with the greater safety of the linear method.

To these operations there are some grave objections, which I shall consider later. But that such a compromise is what is needed, there can, I think, be no doubt. That the relatively perfect results of the flap operation, when completely successful, added to the enormously increased percentage of successes achieved by the linear method, is the aim to be realised must be admitted. So far, however, I believe no procedure has been adopted which satisfactorily accomplishes this end, and I am induced, therefore, to lay before my professional brethren the results of my reflection and practice, feeling that a real step has been gained towards the production of the combination desired.

It is by no means difficult to understand why the linear method superseded the old flap operation. The large area of the cornea included in the flap and the direction and character of the incision, produced an unavoidable tendency to gaping of the wound, which augmented the risk of accident during the performance of the operation and subsequently interfered with perfect apposition of the edges of the wound. To the latter cause must be referred the retarded union, so frequent in flap operations, to which, and not as was formerly believed, to the feeble inclination of the corneal tissue to repair, was due the frequent loss of eyes from suppuration.

The linear method presents the great advantage of a small wound having but little tendency to gape even in violent movements of the eyeball during operation, and predisposing, by the ready apposition of its edges to early union. To this closing of the wound is indisputably due the small number of eyes lost by suppuration, and this constitutes the only excellence of the linear method. It

was formerly thought that the site of the incision, which in the early days of the linear section was in great part in the sclera or corneo-scleral junction, was by its supposed better basis of nutritive supply, the chief cause of the diminution of suppurations. This has been proved to be erroneous, and now all linear incisions are made for the greater part, if not entirely, in the cornea proper. The lessened tendency of the incision to gape is therefore the one excellence of the linear operations.

Its disadvantages are many. As an operation it is complicated and difficult. The upper section is especially enjoined. The marginal position of the incision, its linear direction and its reduced extent, render it impossible for the cataract to escape by passing over the iris, as in the flap operation. An opening is necessitated through the body of the iris. In order to perform iridectomy, and to carry out the succeeding steps of the operation, the great retraction of the upper eyelid required to keep the upper section within sight and reach, calls for the use of the speculum or retractor, oftentimes throughout the whole operation. The pain thus produced and the frequently prolonged duration of the operation, owing to the comparative difficulty of removing cortical *débris* through an upper section, render the use of an anæsthetic advisable, and in most cases imperative.

These and other objections to the linear method, as ordinarily employed, led to the devising of the operations which I have called compromises. Of these, those which have found most favour are probably Bader's, Warlomont's and Liebreich's. These operations have undoubtedly the advantages of being easy of performance and of comparing favourably, so far as total loss of eyes from suppuration is concerned, with the modified linear operations. There are, however, against them two main objections.

First, that the iris is very frequently incarcerated in the incision. This, in addition to its disturbing effects upon vision, is a source of immense danger to the eye operated upon, on account of the destructive changes which such adhesions bring in their train. And second, that incisions passing across the cornea near to its horizontal diameter, must, on healing, produce considerable alteration in the curvature of the cornea, and so cause astigmatism of an irregular kind, rendering the transmission of a well defined image to the retina impossible. For these two reasons, the dangerous results of adhesions of the iris to the cicatrix, and the altered curvature of the cornea, these operations have not, in spite of their simpleness, satisfied the want felt.

In 1868* Dr. Bell Taylor of Nottingham, described an operation in which an incision was employed, which I have come to regard, after much consideration, as possessing the essential characteristics of a good incision.

Having made this acknowledgment I will proceed to describe the method of extraction which I have adopted, premising that the incision therein employed differs from that described by Dr. Taylor in being wholly corneal, instead of being in part situated in the corneo-scleral junction, and also in the direction given to the knife in the latter portion of the incision†.

I am not accustomed to use any preliminary treatment with cataract patients as a matter of routine. I am satisfied to be sure that the patient is in fair general health.

* *Edinburgh Medical Journal*, 1868.

† I do not claim to have done more than select what appears to me the most suitable incision. He would be a bold man who, in these days, should claim to have invented a new incision for cataract extraction.

If the tension of the eyeball be normal or slightly below normal, and the pupil dilate readily, I cause a strong solution of atropia to be instilled two or three times, not later than an hour before operation, so as to lessen the resistance of the sphincter of the pupil. If the tension of the eyeball be higher than normal, or the pupil do not dilate readily, I make an iridectomy. As the question of iridectomy is a very important one I shall discuss it later on.

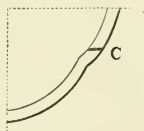
Unless the patient be of a very nervous, sensitive temperament I do not employ an anæsthetic. And even in these cases I am generally accustomed to deaden sensation by means of a good dose of chloral about half an hour before operation, rather than complicate matters with an anæsthetic.

The patient lies in the recumbent posture, on a couch or bed of such a height from the ground that I can conveniently sit by his side. The bed is placed near to a window, having its left side towards the light. I sit facing the patient on the left side of the bed, and maintain this position during operation on each eye, using the knife for incision with the right hand for the left eye, and the left hand for the right. The eyelids are kept moderately apart by means of a speculum. The eye is firmly held by means of a pair of ordinary fixation forceps, grasping the conjunctiva and sclera about over the upper edge of insertion of the internal rectus muscle. I then proceed to make the section which occupies about the *lower* third of the cornea. A small and very narrow Graefe's knife is entered at the corneal margin, parallel to the plane of the iris, just about on a level with the junction of the middle and lower thirds of the cornea. The knife is made to pass directly into the anterior chamber, carefully avoiding a slanting direction between the corneal layers.

Thus, in the diagram, supposing the right eye to be



operated upon, the knife would be entered at A, passed across the chamber, and emerge at C ; then, by a quick, sawing motion, the incision is carried downwards in the corneal margin, parallel with the plane of the iris, to the points B and D. The blade of the knife is then turned directly upwards, so as to form, if possible, an angle of 85° with the plane of its earlier course, as in diagram C,



and in this position is made to cut its way out in a straight line. This done, the speculum is at once removed and laid aside, the position of the incision, with the aid of the unavoidable tendency on the part of the patient to roll the eye upwards, rendering fixation by forceps and the use of the speculum in the later stages of the operation unnecessary. The lids are then closed, and a piece of cotton wool, wetted in cold water, laid over them for a few seconds.

The upper lid is then gently raised by an assistant, and, if iridectomy be necessary, the iris forceps are used with the left hand for each eye. If iridectomy be not necessary,

the capsule of the lens is lacerated in the following manner:—the upper lid being well fixed by the assistant, I depress the lower lid slightly with the fingers of the left hand for the left eye, and those of the right for the right eye, and pass the cystitome between the lips of the wound, resting my hand upon the patient's cheek, so as to allow of free play of the thumb and first two fingers, much as in using a pen. I have found a cystitome bent so as to form an angle of about 150° , and having a cutting point, similar to Graefe's, to be most useful—such as shown in the accompanying engraving.



The point of the cystitome having been passed under the upper margin of the pupil is made to cut its way downwards in such a manner, that, as far as possible, the central part of the capsule shall be destroyed, and the lower part freely lacerated.

The cystitome being withdrawn, the lids are again closed, and covered for a short time with a large pledget of wet wool. In extracting the cataract, I stand by the left side of the patient and raise the upper eyelid with the thumb or forefinger of my right hand. Then with the left hand I depress the lower lip of the incision by means of a curette, a small Daviel's curette being to my mind most convenient. The incision being thus made to gape, gentle pressure is made on the upper part of the eyeball and cornea by the thumb or fingers through the upper lid. A slight rotatory movement on its horizontal axis is thus imposed upon the cataract, and its lower edge presents itself at the opening.

The cataract should be allowed as far as possible to escape slowly, its progress being followed downwards by

a varying but gentle pressure of the upper lid. By judicious manipulation the *débris* of the cortex can be gathered as it were from under the iris, and so completely swept onwards, that very little management is needed for their complete extrusion.

If cortical matter still remain, the same manipulation of the upper lid, aided by supplementary movements of the lower lip of the wound by pressure with the fingers or thumb of the left hand through the lower lid, is all that is required for its gradual removal. There should be no "fishing" for cortical matter with the curette, except as a desperate measure.

The pupil being clear the iris should be entirely freed from entanglement in the wound and replaced either by gentle rubbing over the incision with the lids or, if obstinate, by the use of the curette. The iris being reduced the edges of the wound are very carefully cleaned and placed in apposition, and all *débris* of lens matter, clot, or other foreign substance removed from the conjunctival sac. A solution of the salicylate of eserine, of two grains to the ounce of distilled water, is then once or twice instilled, the lids are closed and covered with a layer of cotton wool between two layers of old linen, the whole well wetted in a solution of boracic acid, and a domet bandage is firmly applied over all.

I shall now offer a few remarks on the more important features of the operation. These are undoubtedly the position and the character of the incision, and the performance of iridectomy.

Notwithstanding all that has been said against the employment of the lower section in cataract extraction, the fact that it presents the greatest facilities for the complete removal of the cataract remains incontestable. If an iridectomy were not imperatively needed in the

linear operation there can be no doubt that the lower section would have been chosen.

The necessity for concealing the disfigurement produced by iridectomy is the main reason for the use of the upper section in that operation ; the linear character of the wound renders unnecessary the support of the upper eyelid, which in the flap operation contributed in an important degree to speedy union.

If then an incision can be found which shall combine the main advantages of the linear incision and the convenience of the lower section, rendering at the same time iridectomy superfluous in the majority of cases, this may, I think, be considered a solid gain.

The incision which I employ, by its angular, quasi-linear character, and by the direction given to the knife in its concluding movement, forms a *trap-door* opening by which large space is obtained, the tendency to gape is reduced to a minimum, and the ready apposition of the edges is secured.

The tendency of the wound to gape being avoided, the manifest convenience and safety of the lower section should outweigh minor considerations. The natural tendency of the eye to roll upwards when irritated, the firmness with which, supplementing the natural act, the patient will keep it in that position when directed to do so, is of immense advantage. It renders all dragging of the eye about with forceps unnecessary. With the upper section much harm is done by pulling the eye downwards in order to reach the wound. In unskilled hands not infrequently, and in skilled hands at times, prolapse of the vitreous humour results from this proceeding. Even if this grave accident do not happen the strain put upon the delicate intra-ocular structures must be great and injurious. All such risks are avoided when the lower

section is employed. The lower section has another great value; it affords the utmost facility for examining the corneal wound after operation, with the smallest degree of displacement of the lids.

The consideration of the performance of iridectomy may be divided into two parts; its use as an ordinary means to facilitate the escape of the cataract; and its use as a preventive measure.

Ordinarily, it is necessary in small marginal corneal incisions to afford passage for the cataract. With the incision I employ it is necessary only when the cornea is unusually small, the nucleus of the cataract very large, or the sphincter of the pupil rigid and not freely dilatable by atropine. And when practised it should be confined to the removal of a piece of the inner margin of the pupil, (sphincter pupillæ), and so need produce but little disfigurement.

The performance of iridectomy as a preliminary or preventive measure requires somewhat fuller consideration.

In 1862, Mooren,* acting on Graefe's suggestion, performed iridectomy a fortnight before the extraction of the cataract. His results showed him to be right in his proceeding. It must, however, be remembered that Mooren practised the old flap operation, and that the tendency of the wound to gape gave ready opportunity for prolapse of the iris, which, in turn, increased the enormous percentage of losses, amounting to about 20 per cent. Experience has now shown abundantly that it has not, with the linear method, the value it formerly had. I believe I am right in saying that serious trouble after cataract extraction but rarely begins in the iris. Iridectomy for artificial pupil or for glaucoma

* Die Verminderter Gefahraen Einer Hornhautvereiterung—bei der Starr-Extraction. Berlin, 1862.

is almost never followed by inflammatory mischief, and it appears to me that the carefully-managed passage of a cataract between the cut edges of the radiating fibres of the iris cannot greatly enhance the risk of mischief. The really serious inflammations after cataract extraction begin behind the iris, probably in the ciliary region.

Personally, I would confine preliminary iridectomy to those cases in which the tension of the cataractous eye exceeds the normal degree.

It would not be right to conclude this description without a statement of the results attending the operation. I have now used this operation almost invariably during the last four years, but have unfortunately accurate notes of only 62 consecutive cases, in hospital and in private practice. For the notes of the hospital cases I am indebted to our excellent house surgeon, Dr. E. W. Wood-White. In the 62 cases, 38 or 61.3 per cent reached with astigmatism carefully corrected, $\frac{3}{8}$ or normal vision; 10, or 16 per cent, reached between $\frac{3}{8}$ and $\frac{1}{2}$; 5 or 8 per cent, reached between $\frac{1}{2}$ and $\frac{3}{4}$; 5 or 8 per cent obtained vision less than $\frac{1}{2}$; and 4 or 6.45 per cent. were lost, 2 from corneal suppuration, and 2 from other causes. These may be otherwise classed in the usual manner as 85.55 per cent. completely successful, and 8 per cent partially successful, making a total of successes at the rate of 93.55 per cent.

This is quite equal to the actual results of the linear method, especially when it is considered that the cases were in not any way selected, and the facility of performance of the operation I employ, as compared with the linear method, is immeasurably greater.

WILLIAM SHAKESPEARE,
FROM A SURGEON'S POINT OF VIEW.*

BY JAMES F. WEST, F.R.C.S.,
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GENTLEMEN, we are assembled to do honour to the immortal memory of William Shakespeare. Ours is a sincere and heartfelt form of hero-worship and we take both pride and pleasure in it. Thomas Carlyle has told us that hero-worship is "transcendent admiration of a great man;" that its characteristics are "that it endures for ever while man endures;" and that "every true man feels himself made higher by doing reverence to what is really above him."

The sentiments of *transcendent admiration, of lasting devotion, and of reverence*, which the much lamented seer of Chelsea claimed as the due of a hero, were never so conspicuously called for or so richly deserved as they have been, and still are, by our great English Hero-Poet, William Shakespeare.

The *admiration* which his works merit is daily growing; they are translated into almost every known language, and appreciated by an ever widening circle of readers and students; their *long endurance* may be estimated from the fact that wherever civilisation extends, there his works take root, and with each succeeding century they are better known and more heartily esteemed. The habit of *doing reverence* to him is with us in Birmingham an honoured custom on this day, and we feel that in joining in this yearly celebration of the

* An Address delivered to the members of the Birmingham Dramatic Club at the annual celebration of Shakespeare's birthday, 1881.

birthday of one of the greatest men who ever graced the muster roll of England's heroes, we are endeavouring to make ourselves higher, nobler, and more worthy of being Shakespeare's fellow countrymen.

I feel, as I doubt not all my predecessors in this office of President of the Dramatic Club, to which you have been good enough to elect me, have felt, that I am utterly unworthy to speak of the duty, the respect, the veneration, aye, the love we owe to Shakespeare's memory. I can only add another pæan to those which have already been sung before in his praise, and even this I utter with diffidence, because I feel how little can be said about him by any one, that has not already been better expressed by one or another of his countless disciples and worshippers.

In thinking over what would be the most suitable subject on which to say something about Shakespeare and his works, I have thought that, as to use his own words, "'tis my vocation," and "'tis no sin for a man to labour in his vocation," I would bring before you *Shakespeare from a Surgeon's point of view*. I do not know whether the Bard of Avon has been looked at in this light before, but it seems to me that it is as easy to set down Shakespeare as a Surgeon, or as a man who had in his time devoted much study to the science, if not to the practice of Surgery and Medicine, as to assign him to any of the other professions by which this many minded being has been claimed.

Why should I not attempt to prove that he knew as much of the curative or destructive properties of plants as any herbalist of those days, or that he understood the pangs of the wounded body, or the horrors of "the mind diseased" as perfectly as any barber Surgeon of the 16th century. He tells us that "miracles are ceased, and therefore we must needs admit the means, how things

are perfected," (*Henry V.*, act i., sc. i.), at a period when ignorance and superstition were rife even in the highest ranks of life.

The disease known as King's Evil was then believed to be capable of cure by the Royal touch, and the superstition continued to prevail in this country until the reign of William III. Shakespeare gives a graphic description of the whole proceeding in *Macbeth*, (a. iv., s. iii.), which I propose to quote in extenso, as it is a true picture of a scene which was of no rare occurrence in his day, and of one which he very likely witnessed at the court of Queen Elizabeth or her successor, the first Stuart King.

Malcolm. "Comes the king forth, I pray you?"

Doctor. Ay, sir; there are a crew of wretched souls
That stay his cure: their malady convinces
The great assay of art; but at his touch—
Such sanctity hath heaven given his hand—
They presently amend. [*Exit Doctor.*]

Macduff. What's the disease he means?

Malcolm. 'Tis called the evil:
A most miraculous work in this good king;
Which often, since my here-remain in England,
I have seen him do. How he solicits heaven,
Himself best knows: but strangely-visited people
All swoln and ulcerous, pitiful to the eye,
The mere despair of surgery, he cures:
Hanging a golden stamp about their necks,
Put on with holy prayers: and 'tis spoken,
To the succeeding royalty he leaves
The healing benediction."

Before proceeding to show you how extensive was Shakespeare's knowledge of physic and surgery, and how far it really was in advance of what was then generally understood, it may be well to say a few words as to the state and condition of medicine, and as to the class of people who practised it.

The art of healing was in a very primitive state in those days: the College of Physicians was only founded

in 1518, and the Society of Apothecaries was not chartered till 1616.

Shakespeare was but 14 years old when Harvey, the discoverer of the circulation of the blood, was born, so that it is easy to imagine how much, in such an age, empiricism and quackery would prevail in default of a more accurate knowledge of the anatomy and physiology of the human body. Before the Reformation the art of healing had been practised by the monks: that they were often erudite and skilful men according to their lights, there can be little doubt; but on the other hand their knowledge was exceedingly limited, and their practice must have been of equivocal value. When the monastic institutions were swept away, the healing art fell into the hands of a few regularly educated physicians;* these gentlemen had obtained their training abroad; thus Linacre, the first President of the College of Physicians, studied at Rome, Bologna, and Florence, and Harvey at Padua. Before their time quacks of all sorts abounded; of what sort they were will be seen by the following quotation from Burton (author of the anatomy of melancholy) who also was a contemporary of Shakespeare. "If any physician shall infer '*ne sutor ultra crepidam*,' and be grieved that I have intruded into his profession, I tell him in brief, he does the same by us:—I know many of his sect who have taken orders in hope of a Benefice—'tis a common transaction; and why may not a melancholy divine, who can get nothing but by simony, profess Physic? Marsilius Ficinus was '*semel et simul*,' a priest and physician, at once '*sacerdos et medicus*,' and also divers Jesuits are at this time '*permissu superiorem*,' surgeon's panders, bawds and midwives. Many poor vicars, for want of

* By the 5th Henry viii., chap. 6, we find there were but twelve regular Surgeons practising in all London, and about the same number of Physicians.

other means, are driven to turn mountebanks, quack-salvers and empirics; and in every village have we not wizards, alchymists, barbers, goodwives, Paracelsians (as they call themselves) possessing great skill, and in such numbers that I marvel how they shall find employment?"

By way of contrast to this general display of ignorance of anatomy and physiology, on which alone a rational treatment of disease can be founded, let me show you how much Shakespeare knew about the physiology of the human body, and more especially of the digestive process. I will read the fable which Menenius Agrippa recounts to the clamorous and discontented Roman Citizens in *Coriolanus*, act i., scene i.

There was a time when all the body's members
Rebelled against the belly; thus accused it:
That only like a gulf it did remain
I' the midst o' the body, idle and inactive,
Still cupboarding the viand, never bearing
Like labour with the rest; where (whereas) the other instruments
Did see and hear, devise, instruct, walk, feel,
And mutually participate (participating), did minister
Unto the appetite and affection common
Of the whole body. The belly answered—
"True is it, my incorporate friends," quoth he,
"That I receive the general food at first,
Which you do live upon; and fit it is,
Because I am the store house and the shop
Of the whole body: but, if you do remember,
I send it through the rivers of your blood,
Even to the court, the heart, to the seat o' the brain;
From me do back receive the flour of all,
And leave me but the bran."

If Shakespeare did not hold the profession of medicine in the same esteem as old Homer, the father of poetry, as shown by his putting into the mouth of the wise Nestor the memorable words,

A wise physician, skilled in wounds to heal,
Is more than armies to the public weal,

he did not at any rate forget the profession to which I

have the honour to belong : we have six learned members thereof and one famous apothecary standing out, as life-like portraits, amidst the vast array of pictures which he has painted for all time. Does not Macbeth boast of two doctors, an English and a Scotch one? Have we not Dr. Caius in the *Merry Wives of Windsor*? a worthy Physician in *King Lear*? another in *Cymbeline*, one Cornelius, a man learned in compounds; and lastly, Dr. Butts, Physician to King Henry VIII., of most sacred memory? a type for all Court Physicians from that day to this.

Physic plays its many parts in Shakespeare's plays, and is the basis of more plots than one: that is a rare distillation which Oberon gives to Titania "to be taken at bed time;" Doctor Cornelius's dose in *Cymbeline* works as much mischief to Imogen as the lean Apothecary's draught on the amorous Romeo. Is not the fair Helena, in *All's Well that Ends Well*, daughter of Gerard de Narbon, a physician, and able to cure the King of "Fistula," the first and last time probably that the cure of that extremely unromantic complaint has formed the basis of a five act Comedy? In the same play too, what a grand epitaph on a physician is given!

He was skilful enough to have lived still,
If knowledge could have been set up against mortality. —Act i.

What more can be said of an incurable case than the following from *All's Well that Ends Well* (act i., sc. the last):—

He and his physicians
Are of one mind; he that they cannot help him,
They that they cannot help.

What more unfavourable prognosis, or to put it more simply, what description of the last moments of poor humanity can be more accurate than that given by

Mrs. Quickly of Sir John Falstaff's deathbed (*King Henry V.*, act ii., sc. iii.).

For after I saw him fumble with the sheets, and play with flowers, and smile upon his fingers' ends, I knew there was but one way: for his nose was as sharp as a pen, and a' babbled of green fields.

King Henry IV. (in the second part of the play), speaks of his kingdom as a doctor might discourse upon it.

Then you perceive the body of our kingdom
How foul it is; what rank diseases grow,
And with what danger near the heart of it.

Warwick's reply to the King's speech is in the same vein.

It is but as a body yet distemper'd;
Which to its former strength may be restor'd;
With good advice and *little* medicine,
My Lord Northumberland will soon be cool'd.

I fancy this is the first hint ever given of Homœopathy.

In another place in the same play, (part i. act iii., sc. i.), a medical simile is used by Hotspur in his address to Glendower.

Diseased nature oftentimes breaks forth
In strange eruptions.

King Henry V., too, says (act iv., sc. i.), respecting the perils that beset the kingly state from homage and ceremony,

Think'st thou the *fiery fever* will go out,
With titles blown from adulation.

That promptness and energy of action are indispensable to success in treating diseases is illustrated by the following passages:—

The patient dies while the physician sleeps.—*Lucrece*.

Diseases desperate grown
By desperate appliance are reliev'd
Or not at all.—*Hamlet*, act iv., sc. iii.

Brutus. Sir, thy cold ways that seem like prudent help are very poisonous when the disease is violent.—*Cor.* act iii., sc. i.

Many diseases are introduced to our notice by Shakespeare, and with some of them there is given at the

same time a valuable hint as to their pathology or treatment. Contagious diseases and the necessity for their early treatment are thus referred to by Lord Sands (*Henry VIII.*, act i., sc. ii.) "Tis time to give them physic, their diseases are so catching," and in the same play (act v., sc. ii.) Gardiner in urging the prosecution of Archbishop Cranmer, says,

If we suffer
(Out of our easiness and childish pity
To one man's honour) this contagious sickness,
Farewell, all physic!

Can any physician who has watched a case of fever, doubt the truth of the words of Cardinal Pandulph:—

Before the curing of a strong disease,
Even at the instant of repair and health,
The fit is strongest.—*King John*, act iii., sc. iv.

How few could in the present day give a better account of an apoplectic attack and its causation than that of Falstaff:—

An't please your lordship. 'This apoplexy is as I take it a kind of lethargy; a kind of sleeping of the brain.

It hath its original from much grief, from study and perturbation of the brain; I have read the cause of his effects in Galen: it is a kind of deafness. *King Henry IV.*, 2nd part, act i., sc. ii.

There is a striking analogy to this passage in *Coriolanus* (act iv., sc. v.), "Peace is a very apoplexy, lethargy; mulled, deaf, sleepy, insensible."

Thersites, the "deformed and scurrilous Grecian" seems to have had a very large category of diseases in his ken. In the 2nd act of *Troilus and Cressida* he chaffs Ajax, thus:—"Agamemnon—how if he had boils? full, all over, generally? And those boils did run. Then would come some matter from him: I see none now." While in the 5th act he spits out at Patroclus, who was himself a surgeon, the disgraceful accusation that he was Achilles'

male varlet, and the following choice collection of maladies on being asked by Patroclus, "What's the news?"

Now the rotten diseases of the south, the guts-griping, ruptures, catarrhs, loads o' gravel i' the back, lethargies, cold palsies, raw eyes, dirt-rotten livers, wheezing lungs, bladders full of imposthumes, sciaticas, limekilns i' the palm, incurable bone-ache, and the rivelled fee-simple of the tetter, take and take again such preposterous discoveries.

We find Nestor, the philosopher, skilled alike in war and council, after hearing Ulysses' "tale of length," summed up in the pithy peroration, "Troy in our weakness stands, not in her strength," saying,

Most wisely hath Ulysses here discover'd
The fever whereof all our power is sick.

Agamemnon at once asks

The nature of the sickness found, Ulysses,
What is the remedy

Troilus and Cressida, act i., sc. iii.

In the same play we come across a reference to grief or trouble as a causation of jaundice, a circumstance now generally recognised, but which then could hardly have been fully known even by physicians. Agamemnon demands of the princes assembled before his tent,

Princes, what grief hath set the jaundice on your cheeks?

In the fifth act, sc. iii., will also be found an allusion by Pandarus, to the following diseases :—

A whoreson pitisick, and a rheum in my eyes too, and such an ache in my bones, that, unless a man were cursed, I cannot tell what to think on't.

The frequent references to fevers and infectious diseases need not be wondered at when we remember how often they visited these shores and what havoc they made at that period. Defoe, in a succeeding age, sketched for us the plague, which was a putrid typhus. These diseases generally came, as now they come, from the east by way of the south of Europe, so we are not surprised at Caliban's malignant wish.

A south wind blow on ye
And blister you all o'er.—*Tempest*, act i., sc. ii.

or at Marcius's exclamation of hatred and bitterness to the Roman soldiers.

All the contagion of the south light on you—Boils and plagues
Plaster you o'er, that you may be abhorr'd
Further than seen and one infect another
Against the wind a mile !—*Coriolanus*, act i., sc. iv.

The melancholy Jacques must have had not a little faith in his own ability, and also in the value of his own prescriptions, when he tells the Duke—

Give me leave
To speak my mind, and I will through and through
Cleanse the foul body of the infected world,
If they will patiently receive my medicine.
As You Like It, act ii., sc. vii.

Shakespeare many times brings surgery to bear in illustrating the ordinary affairs of life: thus in *Romeo and Juliet* (act ii., sc. ii.) occurs the well known line, "He jests at scars that never felt a wound," and in *Othello* (act ii., sc. iii.) the wily Iago says to Roderigo;

What wound did ever heal, but by degrees ?
Thou know'st we work by wit and not by witchcraft.

Does not every physician recognise the fact, that "Care's an enemy to life" (*Twelfth Night*, act i., sc. iii.), and that "Short time seems long in sorrow's sharp sustaining" (*Lucrece*); while on the other hand daily experience shows us that "A light heart lives long" (*Love's Labour Lost*, act v., sc. ii.), and that

Our remedies oft in ourselves do lie
Which we ascribe to Heaven.
All's Well that Ends Well, act i., sc. i.

There can be no doubt of the wisdom of the aphorism, "Unquiet meals make ill digestions" (*Comedy of Errors*, act v., sc. i.)

The early death of precocious children, like little Paul in "Dombey and Son," or Nell in "Master Humphrey's

Clock," is thus touched upon in *King Richard III.* (act iii., sc. i.), "So wise, so young, they say do ne'er live long."

Is there any one who has long suffered from toothache who will not agree with the sentiment expressed by Leonato :

For there was never yet philosopher
That could endure the toothache patiently.
Much Ado About Nothing, act v., sc. i.

The tooth-ache is alleged by Benedick in the same play to be the cause of his distraction, when Don Pedro says, "Draw it;" Benedick impatiently exclaims, "Hang it," when Claudio tauntingly tells him, "You must hang it first, and draw it afterwards." This hanging it, I take it to be an allusion to the key, the vile instrument by which, then and long afterwards, teeth were extracted from the jaws of the unhappy victims of tooth-ache.

The treatment of wounds is often suggested by Shakespeare, and not unfrequently with great judgment. "Your plantain leaf is excellent for a broken shin."—*Romeo and Juliet*, act i., sc. ii. While Hotspur recounts how, when he was "breathless and faint," leaning upon his sword, "Came there a certain lord, neat, trimly dress'd," who roused his ire by telling him, amongst other things, that

The sovereign'st thing on earth
Was parmaceti for an inward bruise.
K. Henry IV., act i., sc. iii.

Who but one well versed in surgery would have been such an adept in the alleviation of the agony of burns by the use of hot applications as to know that

Fire cools fire
Within the scorched veins of one new burnt.
King John, act iii., sc. i.

Who but a surgeon would be aware that new life follows the throwing off of dead tissue in severe injuries or burns?

Probably no pathological process was ever so succinctly or beautifully described as in the following lines :

The organs though defunct and dead before
Break up their drowsy grave, and newly move
With casted slough and fresh legerety — *Henry V.*, act iv., sc. i.

How little is it generally understood that licking of a wound is " 'gainst venom'd sores the only sovereign plaster." — *Venus and Adonis*, stanza 153.

The operation known as the Cesarean Section, by which in certain rare cases of obstructed labour, the child is saved at the risk of the mother's life, was evidently understood by Shakespeare, and the effect of the recital by Macduff of how he "was from his mother's womb untimely ripp'd" is sufficient, following on the fulfilment of the other part of the witches' prophecy, to unnerve Macbeth, and make him fall an easy prey to Macduff's avenging sword.

The operation of venesection is evidently alluded to in *Troilus and Cressida* when Ajax, giving vent to his anger against Achilles (act i., sc. i.) says, "I will let his humours blood;" on which the king Agamemnon utters the following laconic aside: "He'll be physician that should be the patient."

The following passage would seem to show that the itch was a familiar disease in Shakespeare's days. Marcius says to the citizens—

What's the matter, you dissentious rogues?
That rubbing the poor itch of your opinion,
Make yourselves scabs. — *Coriolanus*, act i., sc. i.

He also chides them with the penalty which would accrue from gratifying their own passions in these pregnant words :

Your affections are
A sick man's appetite, who desires most that
Which would increase his evil.

The whole play of *Coriolanus* abounds with illustrations drawn from an intimate acquaintance with the practice of surgery. Making light of his wounds, Marcius says :

The blood I drop is rather physical
Than dangerous to me.

And again, protesting against the Consulate, which his friends offer him—

I have some wounds upon me, and they smart
To hear themselves remembered.
Cominius. Should they not,
Well might they fester gainst ingratitude,
And tent themselves with death.

The effect of good news from his old friend Coriolanus is thus feelingly expressed by Menenius :

A letter for me ! it gives me an estate of seven years' health ; in which time I will make a lip at the physician : the most sovereign prescription in Galen is but empiricuteic (empirical) to this preservative (compared with this), of no better report than a horse drench.

Again the old man's joy finds vent when he hears of Coriolanus' return, thus—

Marcus is coming home : he has *more* cause to be proud. Where is he wounded ?

His mother, Volumnia, replies—

I' the shoullder and i' the left arm. There will be large *cicatrices* to shew the people when he shall stand for his place (as consul).

The advantage of conservative surgery finds expression in the following passages :—

Sicinius. He's a disease that must be cut away.
Menenius. Oh he's a limb that has but a disease ;
Mortal, to cut it off ; to cure it easy.
Menenius. The service of the foot
Being once gangren'd is not then respected
For what before it was ?
Brutus. We'll hear no more.
Pursue him to his house, and pluck him thence ;
Lest his infection, being of catching nature,
Spread farther.—*Coriolanus*, act iii., sc. i.

The importance of attention to cleanliness in the

treatment of wounds and diseases is thus frequently suggested:—

It will but skin and film the ulcerous place,
Whiles rank corruption, running all within, infects unseen.—

Hamlet, act iii., sc. iv.

Since yet thy creatrice looks raw and red after the Danish sword.—

Hamlet, act iv., sc. iii.

King. Like the owner of a foul disease to keep it from divulging, let it feed ever on the pit of life.—*Hamlet*, act iv., sc. i.

The following short extract from *Othello* (act v., sc. i.), seems to show that Shakespeare not only understood the binding up of wounds, but that he also knew how to stop hæmorrhage by compression of the main arteries of the limb with an extemporised tourniquet. After Iago has cut Cassio behind in the leg, he treacherously asks him, "How is it, brother?" Cassio then says, "my leg is cut in two." Iago at once proffers his services; "Heaven forbid," "I'll bind it with my shirt," and a few minutes after, "Lend me a garter; so, Oh! for a chair, to bear him easily hence." "I'll fetch the general's surgeon."

Another hint of the necessity for surgical assistance in cases where blood is likely to be spilt is given in the Trial Scene of the *Merchant of Venice* when Portia tells Shylock—

Have by some surgeon, Shylock, on your charge,
To stop his wounds, lest he do bleed to death.

Shakespeare in many ways shows a knowledge of the virtues of plants and simples, and his appreciation of them.

Oh mickle is the powerful grace that lies
In herbs, plants, stones, and their true qualities.

Romeo and Juliet, act ii., sc. iii.

The efficacy of plants in making the air healthy, a fact due to their giving out oxygen, which is even now not universally recognised, is thus alluded to:

Their verdure still endure
To drive infection from the dangerous year.

Venus and Adonis, stanza 85.

How this knowledge was acquired he tells us in this sublime passage, which breathes the spirit of the true student of nature.

I have,
Together with my practice, made familiar
To me and to my aid, the blest infusions
That dwell in vegetives, in metals, stones ;
And I can speak of the disturbances
That nature works, and of her cures.

Pericles act iii., sc. ii.

Iago uses the following expressive simile, "The food that to him now is as luscious as locusts, shall be to him shortly as bitter as *coloquintida*" (*Othello*, act i., sc. iii.), an obvious reference to the bitterness of colocynth or bitter apple.

Friar Laurence (*Romeo and Juliet*, act ii., sc. iii), after gathering "baleful weeds and precious juiced flowers," on taking up one of the latter, which was probably, judging from its subsequent effects on Juliet, a specimen of the *papaver somniferum*.

Within the infant rind of this small flower
Poison hath residence and medicine power :
For this, being smelt, with that part cheers each part ;
Being tasted, slays all senses with the heart.

We have another instance of the kind of medicaments then in vogue. When the Abbess chides Adriana (*Comedy of Errors*, act v., sc. i.), for wanting to attend her husband, "be his nurse, diet his sickness," in the following passage :—

I will not let him stir
Till I have used the approved means I have
With wholesome syrups, drugs and holy prayers
To make of him a formal man again.

Shakespeare's acquaintance with drugs and their properties was by no means limited, and it would appear

that many of the remedies then in vogue still hold their place in our pharmacopœia : thus Macbeth asks his physician, who has just told him of his wife's "thick-coming fancies," while his own mind is intent on the coming battle,

What rhubarb, senna, or what purgative drug
Would scour these English hence ?

And again he returns to the same subject :

If thou couldst, doctor, cast
The water of my land, find her disease,
And purge it to a sound and pristine health,
I would applaud thee to the very echo.

Banquo, after listening with Macbeth to the witches' prophecies, says,

Were such things here as we do speak about ?
Or have we eaten of the insane root
That takes the reason prisoner ?—*Macbeth*, act i., sc. iii.

This "insane root" was henbane, which at that time had the credit of taking away wit and reason, and breeding madness. It is again alluded to by Shakespeare in *Hamlet* (act i., sc. v.), where the ghost of Hamlet's father attributes his death to its means.

Upon my secure hour thy uncle stole,
With juice of cursed hebenon in a vial,
And in the porches of mine ear did pour
The leperous distilment ; whose effect
Holds such an enmity with blood of man,
That swift as quicksilver it courses through
The natural gates and alleys of the body,
And with a sudden vigour it does posset
And curd, like eager (*i.e.*, acid) droppings into milk
The thin and wholesome blood : so did it mine.

Shakespeare in this description was following the idea handed down from Pliny, as to the effects of the oil extracted from henbane when dropped into the ear. It is even now used as a sedative, though its effects

are judged to be less potent than those formerly ascribed to it.

Hemlock, another sleep-producing and poisonous drug, is more than once referred to by Shakespeare. The witches in *Macbeth* use it as one of the ingredients for their weird kettle-drum.

Root of hemlock, digg'd i' the dark.

Cordelia describes her father wandering about

Mad as the vexed sea.

Crowned with rank furmiter and furrow-weeds,
With harlocks, *hemlock*, nettles, cuckoo-flowers,
Darnel...

King Lear, act iv., sc. iv.

All these are plants having poisonous, bitter and distracting properties, and are emblematical of the sources and variety of the madness under which the old and unhappy King Lear was labouring.

Shakespeare was no ascetic, as we know from his history. Does he not himself say, "Good wine is a good familiar creature, if it be well used."—(*Othello*, act ii., sc. iii.): and yet from his works the advocates of temperance might cull abundant texts on which to lecture.

The evils that result from intemperance and gluttony have never been painted by a firmer or more vigorous pencil, and every medical man must admit the importance and reality of the illustrations he has given us.

Boundless intemperance hath been
The untimely emptying of the happy throne
And fall of many Kings.

Macbeth, act iv., sc. iii.

The gods are just, and of our pleasant vices
Make instruments to scourge us.

King Lear, act v., sc. iii.

Ask God for temperance; that's the appliance only
Which your disease requires.—*Henry VIII.*, act i., sc. i.

Cassio's soliloquy on the perils resulting from abuse of

wine is "familiar in their [*i.e.* the teetotal lecturers'] mouths as household words."

O that men should put an enemy in their mouths to steal away their brains !

And again,

O thou invisible spirit of wine ! if thou hast no name to be known by, let us call thee devil.—*Othello*, act ii., sc. iii.

Iago. Yet again your fingers to your lips ? Would they were clyster pipes for your sake !—*Ibid*, act ii., sc. i.

While on the other hand, and by way of contrast to this coarseness, what can be more touching, and at the same time more truthful, than the explanation which old Adam gives of the strength and lustiness he enjoys in the very winter of his life owing to his temperate habits.

For in my youth I never did apply
Hot and rebellious liquors in my blood ;
Nor did not with unbashful forehead woo
The means of weakness and debility ;
Therefore my age is as a lusty winter,
Frosty, but kindly.

As You Like It, act ii., sc. iii.

The subtle and almost imperceptible way in which evil habits grow on a man is thus pithily expressed in the *Two Gentlemen of Verona*, act v., sc. i.

How use doth breed a habit in a man.

That even our most cherished passions and vices may however have a curb put on them is suggested by the lines,

It is a custom
More honoured in the breach than the observance.

Hamlet, act i., sc. iv.

The Gout, which was doubtless as common a disease in Shakespeare's days as now, is often used as an illustration : Orlando asks Rosalind—

Who ambles time withal ?

She wittily replies—

With a priest that lacks Latin, and a rich man that hath not the gout : for the one sleeps easily because he cannot study ; and the other lives merrily because he feels no pain.—*As You Like It*, act iii., sc. ii.

The circumstance that this disease has a predilection for the great toe, that there is scarcely any bound to the severity of the pain produced by it, and also the life-long character of the disease, are illustrated in the following passages. Falstaff apostrophises thus :—

A pox of this gout or a gout of this pox ! for the one or the other plays the rogue with my great toe.—*King Henry IV.*, 2nd part, act i., sc. v.

May we not glean from this soliloquy that the old libertine had, in addition to his paying the penalty attending on his gross living, also suffered from his devotion to the fair sex.

Friend hast thou none ;
For thine own bowels, which do call thee sire,
The mere effusion of thy proper loins
Do curse the *gout*, *serpigo* and the rheum, [all hereditary diseases]
For ending thee no sooner.

Measure for Measure, act iii., sc. i.

Posthumus, in the middle of his misfortunes, exclaims :

Yet am I better
Than one that's sick of the gout ; since he had rather
Groan so in perpetuity than be cured
By the sure physician, Death.

Cymbeline, act v., sc. iv.

There is a distinct allusion to syphilis and its causation in the second part of *King Henry IV.*, (act ii., sc. 4.) Falstaff says to Doll Tear-Sheet—

You make fat rascals, Mistress Doll.

Doll answers—

I make them ! Gluttony and disease make them : I make them not.

Falstaff then remarks—

If the cook help to make the gluttony, you help to make the diseases.
Doll : we catch of you, Doll ; we catch of you ; grant that, my poor virtue,
grant that.

Of hydrophobia and its dangers we get a hint in the
Comedy of Errors (act v., sc. i.), where the abbess tells
Adrian—

The venom clamours of a jealous woman
Poison more deadly than a mad dog's tooth.

Shakespeare could make a joke out of any subject, no matter how dry or unpromising, but no one before or since has ever made such fun as he did of the surgeon's art. Thus, in *Julius Caesar* (act i., sc. i.), when Flavius asks: "Thou art a cobbler, art thou citizen?" The cobbler replies: "I am, indeed, sir, surgeon to old shoes; when they are in great danger I *re-cover* them."

In *Twelfth Night* (act i., sc. i.), anent the debauch of Sir Andrew Aguecheek and Sir Toby Belch, when both arrive on the scene with *bloody cox-combs*, Sebastian calls out, "For the love of God, a surgeon." Sir Toby hiccups out, "Sot! didst see Dick Surgeon, sot," when the clown replies (in Eccles vein) "Oh, he's drunk, Sir Toby, an hour ago; his eyes were set at eight i' the morning."

Another joke against the surgeon's practice occurs in the *Tempest* (act ii., sc. i.), when Gonzalo says,

My Lord Sebastian, you rub the sore
When you should bring the plaster.

Sebastian answers, "Very well;" when Antonio chimes in with the cutting remark: "And most chirurgeonly."

Few can be facetious when they have received their quietus from cold steel; and yet Mercutio, exhibiting the ruling passion strong even when he was at death's door, and true to the jocund spirit which had been his through

life, tells Romeo, when he says, "Courage, man, the hurt cannot be much." "No, 'tis not so deep as a well, nor so wide as a church door; but 'tis enough: 'twill serve: ask for me to-morrow and you will find me a *grave* man."

The passage reminds one of Hood's joke at his own expense, when towards the close of his last illness, a mustard plaster was about to be applied to his poor wasted chest; "So much mustard, and so little meat."

I do not purpose on this occasion, as I have been rather looking at Shakespeare from a surgeon's point of view than from a psychologist's, to say anything of his wonderful portrayal of the different varieties of madness, though perhaps he gives in King Lear, Hamlet, Ophelia, Lady Macbeth, and Cassandra, the most wonderful of the illustrations of mental disease with which the world has yet been furnished. It is a subject too wide and too difficult also, to be dealt with in the limited space of time at my disposal; but in nothing is his description of the saddest phases of poor humanity so perfect as in his delineation of "the mind diseased."

That sweetest and most sovereign reason
Like sweet bells jangled, out of tune and harsh.
Hamlet, act iii., sc. i.

It would, however, scarcely be right to leave the subject of Shakespeare as a surgeon, without saying a few words respecting the beauty and infinity of his references to the "Last scene of all that ends this strange eventful history," with which every surgeon is unhappily too familiar. He wisely reminds us that though

By medicine life may be prolonged, yet death
Will seize the doctor too.
Cymbeline, act v., sc. iv.

He comforts the miserable with the assurance, "that they have no other medicine, but only hope."

He warns us that "the sense of death is most in apprehension." That we may be prepared for it, and that we may meet it with resignation, he gives us that most excellent piece of advice conveyed in King Henry the Fifth's address to his soldiers the night before the battle of Agincourt (act v., sc. i.)

Therefore should every soldier in the wars do as every sick man in his bed, wash every mote out of his conscience : and dying so, death is to him advantage ; or not dying, the time was blessedly lost, wherein such preparation was gained.

Lastly, in the midst our afflictions and troubles he bids us ever in faith to look upwards :

Now, God be praised, that to believing souls
Gives light in darkness, comfort in despair.

King Henry VII., Part ii., act ii., sc. i.

REPORTS OF CASES.

THE GENERAL HOSPITAL.

JACKSONIAN EPILEPSY (*under the care of Dr. Saundby*).—Louisa W., aged 13, applied at the Hospital on March 30th, 1881, complaining of spasmodic attacks affecting the right side of the face and the right arm. Two such attacks occurred last Christmas, but during the past week they have returned daily, as many as 14 having happened in one day. During the attacks she can only say "yes" to every question that is addressed to her.

Previous Health.—Her previous health has been very good; she can recollect no illnesses.

Family History.—Parents living and in good health. Four brothers, all younger than herself and in good health. The only instance of nervous disease in the family was her maternal grandmother, who was insane.

Present Condition.—She is a bright, intelligent looking child, rather tall for her age, and slightly built. She has passed the 3rd standard of the School Board. She complains of frontal headache, especially after the attacks; there is no tenderness of the scalp. Ophthalmoscopic examination of the eyes showed the discs to be normal, the vessels being very full and tortuous. There was hypermetropia of $\frac{1}{16}$ v = $\frac{15}{xx}$ (Mr. Eales). The heart's apex was in the 5th interspace, inside the vertical nipple line; there was a systolic apex murmur, and the pulmonary second sound was accentuated. The pulse was 108, regular. There was no cough, dyspnœa, or œdema. The lungs were normal; liver and spleen normal; bowels open regularly; she had never menstruated.

Treatment.—She was ordered

R. Pot. iodidi, gr. v.
Pot. bromidi, gr. x.
Aquæ ʒi. t. d. s.

Progress of Case.—She continued to take this until the end of May, when she ceased attending, having had no return of the fits.

Remarks.—These cases of clonic spasms affecting particular groups of muscles, are regarded by Dr. Hughlings Jackson, as instances of limited epileptic dis-

charge of certain convolutions, hence the name Jacksonian or partial epilepsy. There is no loss of consciousness as in the true epilepsy. They are always suggestive of a local lesion; but in the present case no evidence of such was discoverable. It is noticeable that the disturbance of function apparently involved the speech centre. The treatment proved as immediately successful in this case as it was in a similar case some time ago; in both there was no return of the fits after commencing the bromide and iodide mixture.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

PATHOLOGICAL AND CLINICAL SECTION.

Ordinary Meeting, Friday, April 29th, 1881.

Dr. B. W. Foster in the chair.—The following gentlemen, having been duly nominated, were unanimously elected office bearers for the ensuing year:—Chairman, Mr. J. F. West, F.R.C.S.; Secretaries, Dr. A. H. Carter and Dr. Robert Saundby.

MIDLAND MEDICAL SOCIETY.

SESSION 1880-81.

Ordinary Meeting held 6th April, 1881.

Dr. Savage in the chair.—Mr. A. Orchard, Queen's Hospital, was elected a member.

Dr. Malet showed a specimen of Carcinoma of the Mediastinum.

Mr. Eales showed two cases:—1. Case of pigmentation of the sclerotic, the result of inflammation following a punctured wound of the cornea involving the iris and ciliary processes. 2. (Edema of the conjunctiva limited to one eye, due, Mr. Eales believed, to local obstruction of lymphatics. He believed both cases to be extremely rare, and the second absolutely unique.

Dr. Hickinbotham showed Dr. Dudgeon's Pocket Sphygmograph.

Dr. Underhill showed a piece of steel removed from a traumatic aneurism in the arm of a boy. The foreign body was found close to the radius, having divided the radial artery. The aneurism was successfully operated on three weeks after the injury.

Mr. H. R. Ker read a paper which he entitled "A few Surgical Notes." It included, however, the following interesting and important operations. Two successful ovariectomies—one during pregnancy, the other with suppurating cyst. An abdominal section for impacted gall stone, and a case of severe injury to the hand.

Mr. Eales read a paper on Tobacco Amblyopia. The meeting was prolonged a quarter of an hour for the discussion of the paper.

Ordinary and Special Meeting held 20th April, 1881.

Dr. Savage in the chair.—Dr. Atkinson, of Kenilworth, was elected a member.

The following members were nominated to fill the several offices for the Session 1881-82:—President, Mr. John Manley, West Bromwich. Treasurer, Mr. Harmar. Secretaries, Mr. H. Eales and Mr. T. F. Chavasse. Four Members of Council, Mr. Garner, Dr. Sawyer, Mr. West, Dr. Welch.

Mr. T. F. Chavasse showed four cases of antiseptic osteotomy, which had been done in the out-patient room of the General Hospital.

Mr. W. Thomas showed the bones from a case of excision of the elbow. The specimen showed the characters of osteo-sclerosis with considerable ulceration of cartilages.

Mr. Thomas also showed an interesting specimen of exomphalos from an infant three days old. Also an ingenious splint for excision of the knee, simple and inexpensive.

Dr. Malins read a paper describing two cases of Cæsarian section.

Mr. Bartleet made some remarks on the operation of paracentesis thoracis. He described his method of passing a drainage tube through the chest by passing a long probe through one incision and a large director through another, and "feeling" the probe into the groove of the director.

THE ANNUAL MEETING OF THE BRANCH.

The Annual Meeting of the Birmingham and Midland Branch of the British Medical Association took place on Tuesday, June 28th, at the Grand Hotel, Colmore Row. There was a large attendance, Mr. Christopher Heath being among the visitors. After the report of the Council, and the Treasurer's report had been read, the Meeting unanimously voted the sum of £10 to the Medical Institute for the purchase of books, and a similar sum to the funds of the Medical Benevolent Society.

Mr. T. H. Bartleet, the new President, delivered his address, which is printed elsewhere in these pages. After the address the members and visitors proceeded to dinner which was well attended.

THE PATHOLOGICAL SECTION CONVERSAZIONE.—

The Chairman of the Pathological and Clinical Section gave a brilliant *Conversazione* at the Medical Institute, on the evening of June 3rd, at which about 300 were present. The new building of the Institute never showed to better advantage than when, tastefully decorated, it became filled with those for whose reception it has been constructed. The reception took place in the Library Hall, which was surrounded with tables, on which apparatus, microscopes and drugs were exhibited. Dr. Norris, Mr. Priestley Smith and Dr. MacMunn showed physiological apparatus, and illustrated particular questions in physiology and pathology. Mr. Parkes displayed a beautiful series of microscopic objects under his excellent microscopes, which are too little known by his name. Drugs were exhibited by Messrs. Southall, who also showed their Ladies' Sanitary Towels, and a fine set of autotype illustrations of medicinal plants. Mr. Best showed a new form of naso-oral respirator for the continuous inhalation of carbolic acid, or other antiseptic. Messrs. Burroughs, Welcome and Co. exhibited a large collection of their American specialties. Messrs. Salt and Son had on view a splendid assortment of surgical instruments and medical appliances. Mr. Lancaster's electrical and physical apparatus was a constant centre of attraction.

THE QUEEN'S HOSPITAL—We have to chronicle several changes on the staff of this Hospital. We regret that Mr. Sampson Gamgee has found it necessary for his

health's sake to resign the active duties of Surgeon to the Hospital, and has been elected to the honourable position of Consulting Surgeon. Mr. Bennett May, M.B., B.S., Lond., F.R.C.S., Eng., has been elected as Surgeon in succession to Mr. Gamgee, and Mr. Jordan Lloyd, M.B., Durh., F.R.C.S., Eng., has succeeded Mr. Bennett May, as Casualty Surgeon.

THE SKIN AND LOCK HOSPITAL.—Dr. Heslop and Dr. Russell have been elected Consulting Physicians; Mr. Oliver Pemberton and Mr. Furneaux Jordan, Consulting Surgeons; Mr. Priestley Smith, Consulting Ophthalmic Surgeon; Mr. Gilbert Smith, F.R.C.S., Ed., and Mr. John Taylor, F.R.C.S., Eng., Honorary Surgeons, to this Charity.

THE MEDICAL BENEVOLENT SOCIETY.—The annual general meeting of this Society was held at the Grand Hotel, on Friday, May 27th, Mr. W. H. Sproston in the chair. Dr. Sawyer read the annual report, which showed that the invested funds of the Society now amount to £9,793, an increase of £523 during the past twelve months. We take this opportunity of urging all members of the profession who reside within a radius of fifty miles of Birmingham to avail themselves of the advantages of this Society.

THERAPEUTICS.

ERUPTIONS FROM CHLORAL.—Dr. H. H. Kane (New York Medical Record, April 30th, 1881), has collected a number of cases in which rashes have been caused by chloral; these have been usually erythematous, with slight disquamation, sometimes numbness and itching, the latter being very severe, have been noticed; in one case the rash, sore throat and tongue resembled scarlatina, in other cases lichen, and buccal eczema, pustules, boils, and vesicles have been described.

TURPENTINE VAPOR IN RELAPSING FEVER.—Prof. Gerhardt (Meditz. Obozrenie, xiv., p. 201, (New York Medical Record, 1881, No. 18), noticed fall of temperature, reduction of splenic enlargement, and shortening of the attack in a case of relapsing fever, after

the use of turpentine vapor for an intercurrent symptom. The good effects were observed in a subsequent attack, and in three other patients.

CAMPHOR AS A HYPNOTIC.—Wittich has repeatedly administered camphor to relieve the insomnia which accompanies certain forms of mania, hysterical insanity, and hypochondria. He has found that under such conditions camphor acts much better than chloral, morphia, or bromide of potassium. He administers it by a hypodermic injection. He dissolves it in olive oil, and the dose which he recommends is from one to one and a quarter grains. Small doses are more certain to produce sleep than large doses. The sedative effect, as a rule, appears rapidly, and the sleep produced lasts several hours. The injection is to be repeated when the restlessness reappears.—*Journale Méd. de Bordeaux*, (Dublin Journal of Medical Science).

THE TREATMENT OF ASTHMA.—Dr. I. M. Rocheston recommends the fluid extract of *grindelia robusta* in 15 to 20 drop doses at intervals of 4 to 6 hours, for the relief of all forms of asthma, whether simply spasmodic or inflammatory, due to heart disease or hay pollen.—*New York Med. Abstract*, 1881. No. 6.

New Books, &c., Received.

1. The Indiana Medical Reporter, Vol. 2, No. 2. —2. On Metria. By JOHN THORBUN, M.D.—3. Report of the Health of the Borough of Birmingham, for the year 1880. By ALFRED HILL, M.D.—4. The Young Doctor's Future. By E. DIVER, M.D. Smith, Elder and Co., 1881.—5. The Hair Dressers' Chronicle. No. 370.—6. Deformities of the Mouth. By Oakley Coles. Third Edition. London: J. and A. Churchill, 1881.—7. Annual Report on the Health of Carlisle, for the year 1880. By ROBERT ELLIOT, M.D., F.R.C.P.—8. A Guide to the Use of the Laryngoscope. By GORDON HOLMES, L.R.C.P., Edin. J. and A. Churchill.—9. On Cancer, its Allies and other Tumours. By J. ALBERT PURCELL, M.D., M.R.C.S. J. and A. Churchill.—10. Rheumatism, its Nature, Pathology, and Successful Treatment. By S. J. MACLAGAN, M.D. London: Pickering and Co.

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